

Bob Cooper's

OCTOBER 15 2005

SatFACTS

MONTHLY



Reporting on "The World" of satellite television in the Pacific and Asia

IN THIS ISSUE

Do your
fittings
"fit"?

TWO new
STBs:
Reviews

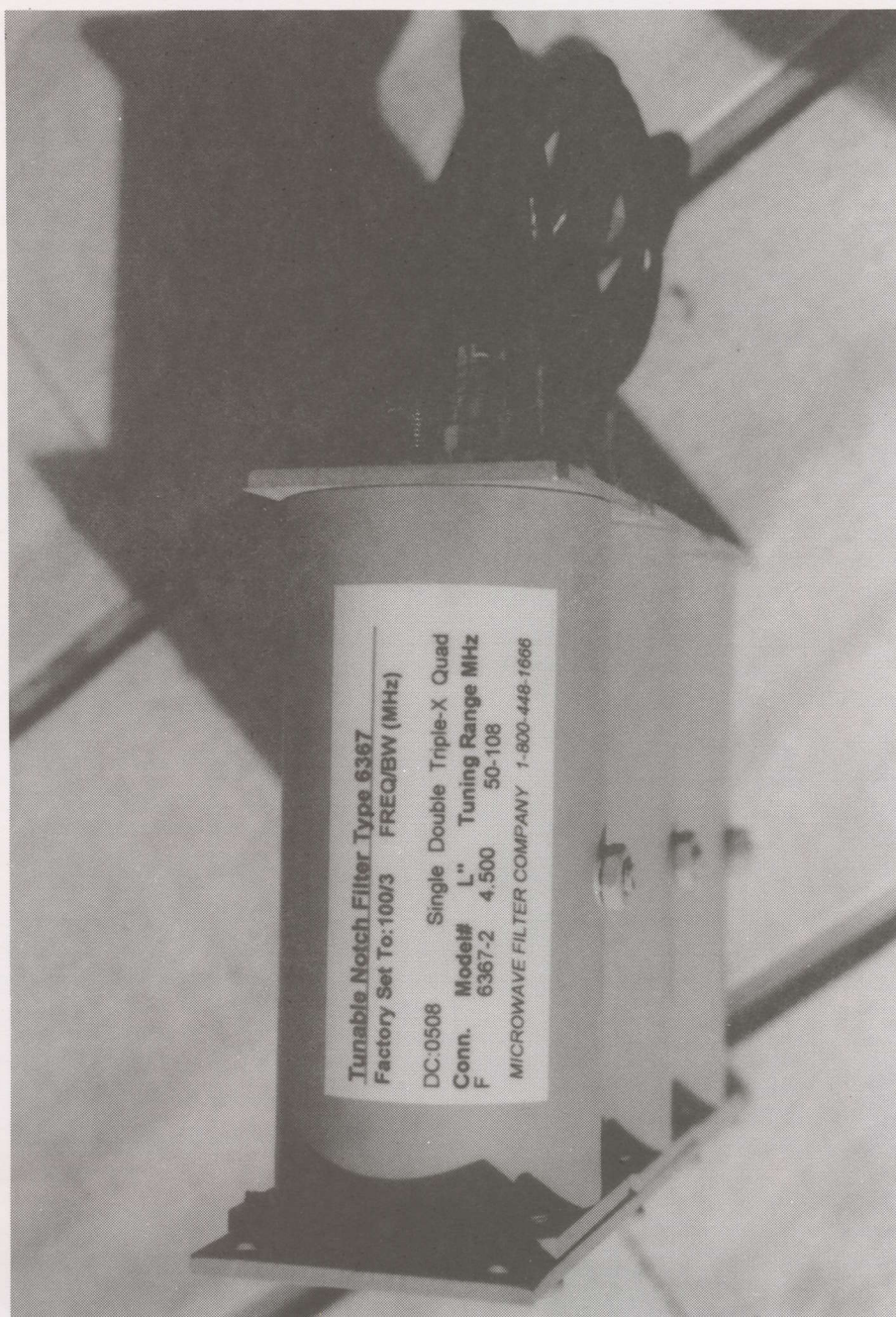
Low-cost
MPEG-2 you
can do

- ✓ Latest Programmer News
- ✓ Latest Hardware News
- ✓ Off-air signal trapping
- ✓ Observer Reports

Vol. 12 ♦ No. 134

Price Per Copy:

NZ\$10/A\$11/US\$/Euro8



Hualin Pty Ltd

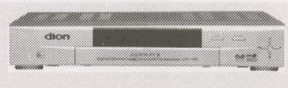
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Email: sales@hualin.com.au Web: www.hualin.com.au

For all prices, product information and banking details please visit the website or phone us.

Specials this month

DT800PVR - Digital Receiver



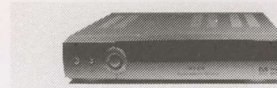
- 40Gb HDD = 40hr Record time
- 2x CI CAM Slots
- DiSEqC 1.2
- **Fibre Optic Output Capability**
- Price: \$390 AUD + GST

Satlook - Signal Meter



- Digital, Analogue and combined versions available
- A must for the professional
- Simple menus and functions
- Price: Phone up for Quote

DreamMAX - DT470



- Irdeto embedded
- 4900 Channel Memory
- DiSEqC 1.2
- User Friendly
- Price: \$200 AUD + GST

Everything? Yeah we got

LNBF

- Zinwell C Band
- Zinwell KU Band
- MTI C Band, Superhigh gain
- One Cable Solution - CBand
- Dual Output KU 11300 MHz

Positioners

- Superjack EZ-2000
- Superjack DP-6600, DiSEqC 1.0/1.2
- Technosat DP-200, DiSEqC 1.2
- Manual Actuator Driver - EW101
- SAP 2000: 99 Memory positioner

Actuators

- Superjack HARL-3618, 18" Actuator
- Superjack HARL-3624, 24" Actuator
- Superjack DG-120, H/H Mount

Receivers

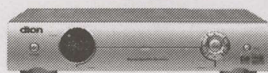
- SuperNET CA, Irdeto Embedded
- Success, Free-to-Air
- Dion DT-370, Free-to-Air Receiver
- Dion 2x CI, Hardware AllCAMed
- ChangHong, Mediaguard embedded
- SuperNET Terrestrial, DVB-T
- Phoenix High Definition STB

Dish and mounts

- 1.2, 1.8m Solid Prime focus
- 45, 60, 65, 85cm KU dish Offset
- 2.13m, 2.27m, 2.4m, 3.0m, 3.07m, 3.7m, Mesh Dish, Light and Heavy Duty PSI and JOYSAT Available

- CBand Wall brackets
- CBand Concrete mounts and stands
- KU Gutter mounts
- KU Wall mounts
- KU Float mounts
- KU Tinroof mount

Dion 818 CI - Digital Satellite Receiver



- Slim Size and User Friendly OSD
- 2x CI (Common Interface) slots
- Hardware AllCAMed

SuperJack H-H Actuator, DiSEqC embedded



- All it takes is one coaxial cable....
- NO MOTOR CABLE REQUIRED**
- DiSEqC Positioner EMBEDDED!

Supernet - Terrestrial DVB-T



- Digital Terrestrial Receiver
- Slim Design
- High Quality Picture
- Easy to install and use

Dion316 - Digital Satellite Receiver



- FTA + Software Patched
- 4000 Channel Memory
- DiSEqC 1.0/1.2 Compatible
- Price: \$170AUD + GST

Switches and Splitters

- 2 and 4 way DiSEqC switches
- 0/22kHz switches
- 2 and 4 way cable splitters
- V/H Multiswitch
- 0/12V Switch

Cable - 15m, 25m, 305m packs

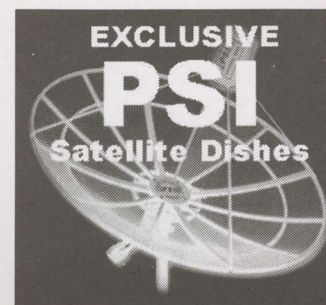
- RG6-U Dual Shield Coaxial Cable
- RG6-U Quad Shield Coaxial Cable
- Cat5 Actuator Cable

Plugs

- F Connectors, Screw or Clamp types
- Cable joiners
- AV Splitters
- Cable Strippers
- Cable clampers
- Various other joiners and accessories e.g. RCA/SCART cables and converters

Misc

- 2.4GHz AV Sender
- Irdeto 2.06B CAMs, Viaccess CAMs
- Satlook Digital Signal Meter
- Satlook Analogue Signal Meter
- Satlook Digital + Analogue combo
- Satellite finders
- Angle level measure instrument
- High Quality Compasses



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This publication is dedicated to the premise that as we enter the 21st century, ancient 20th century notions concerning borders and boundaries no longer define a person's horizon. In the air, all around you, are microwave signals carrying messages of entertainment, information and education. These messages are available to anyone willing to install appropriate receiving equipment and, where applicable, pay a monthly or annual fee to receive the content of these messages in the privacy of their own home. Welcome to the 21st century - a world without borders, a world without boundaries.

Editor/Publisher
Robert B. Cooper (ZL4AAA)
Office Manager
Gay V. Cooper (ZL1GG)

Reaching SatFACTS

Tel: 64-9-406-0651
Fax: 64-9-406-1083
Mail: PO Box 330
Mangonui, Far North
New Zealand
Email - Skyking@clear.net.nz
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The fine print

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our 12th year!

COOP'S COMMENT

If a BCL proposal now before TVNZ and the balance of the free to air terrestrial telecasters in NZ takes flight, the long convoluted trail to digital television in New Zealand will be over. It will be terrestrial and BCL will provide it. Satellite delivery will be knocked off the agenda because BCL wants to protect the 'value' in their expensive, elevated, hill and mountain top sites. And government is buying, even backing, the plan. It is a rebirth of BCL, once the proud transmission arm of TVNZ and others, from the ashes; the phoenix has landed.

The plan now under serious study, at the TVNZ Board level, would create DTT using the European standard and 8 MHz bandwidth channels almost exclusively in the UHF (NZ channels 27 to 62) range. Engineering studies by BCL's more than capable planners suggests that 90% of the population would be reached with multiple-programmes-per TV channel. Using current compression technology, at least 4 programmes per 8 MHz and if one lowers standards a tad, by increasing the compression algorithms, more programmes. This appeals to broadcasters, of course, because each digital programme channel is the viewer equivalent of an existing analogue network. TV2-1, for example, might carry the same programming one now finds on TV2, TV2-2 an entirely different TV2 schedule.

Ninety percent of the population should not be confused with '90% of the country'. I am not privy to the BCL's planned coverage, but working backwards from 90% of the population, that would leave 400,000 people without television after DTT became the only TV available. Before this proposal landed at TVNZ, there has been an alternate plan to rely on terrestrial DTT for perhaps 75% of the population, and a parallel satellite service (using B1 or possibly the replacement D1 or D2 birds scheduled for 2006) for the remainder; 25%. BCL's current plan makes no allowance for satellite; *none at all*.

So what happens, then, to 400,000 Kiwis, left without television? BCL's proposal leaves that to government to sort out, but the most 'popular' sub-plan suggests that government cash-subsidise conversion of these homes to Sky's commercial satellite service. If one assumes 400,000 people not reached by terrestrial are the rough equivalent of 100,000 homes, there is a clue as to what this would cost government. The number is in the range of \$5,000,000 based upon the current (today) Sky offers of \$49 installation and the first two months of (a) movie and (a) sport service, free.

BCL's time frame for this will be hotly debated at all levels. BCL admits that the British terrestrial 'Freeview' system, which has been a run-away success, is their 'model'. The Brits have recently established 2012 as their analogue shut-down date; the Americans, facing similar analogue-switchoff fears, continue to vacillate between 2008 and 2010. Australia, with an original target in the 2007-2008 period, now admits that is overly ambitious. BCL wisely recognises that any date, no matter when, becomes a lightning rod for critics.

Shutting down analogue means major adjustments for viewers. Statistics NZ suggests there are 2.8 'TV receiving devices' per home, including actual receivers and VCR products. Therefore, when analogue is switched off the median home will require not one but 2.8 (or more as the median is growing) STBs. BCL is preaching 'conversion' and 'replacement' as a natural side effect of time. An analogue turn-off date such as 2015 is ten years away, leaving time for suppliers to sort out TV set designs while retailers learn how to sell (and install) digital TV. The natural flow-on of new TV sets, digitally equipped, will before some date such as 2015 pretty much negate the need for STBs on a large scale. Second sets, VCRs manufactured before digital is commonly available, will be the major market for STBs.

BCL's anti-satellite argument goes like this. Transponders cost money, as much as NZ\$6 million a year, and they quit. "Why should New Zealand become beholden to foreign satellite service providers when right here at home, BCL possesses the capacity and skills to provide an equivalent linking service?" One reason why satellite might have made more sense is actual cost - if NZ\$30 million is the cost of conversion for BCL transmitter sites to digital, equal to 5 year rent for one transponder (although more than one will be required), BCL still looks like the least expensive right of passage. And at the end of the day, BCL's high value hill and mountain top transmission sites stay functional - a major part of BCL's 'asset book value'.

In Volume 12 ♦ Number 134

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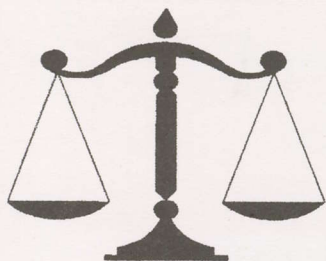
-On the cover-

Putting stress on inline traps - and winning (see p. 15)

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October 15, 2005

PROGRAMMER
PROGRAMMING
PROMOTION

UPDATE

OCTOBER 15, 2005

Count me in - continues

"I am also interested in joining the group to attend Atlanta TVRO Expo 2006 (next April)."

Basil Devoren, ZL2UT

The 'interested' group now total 14 from Solomon, Fiji, Australia and New Zealand. See SatFACTS #131 (July 2005) and communicate with Coop at skyking@clear.net.nz.

C1 Hz into New Zealand

"I am located north of Auckland, half-way up towards the 'top' and using a 1.2m offset with a Strong X-Box IRD loaded 76 TV and 22 radio C1 horizontal services, after digesting the report in SF#133. The dish must be very precisely 'on the bird' as the various horizontal transponders I do receive register in the region of 37-38% with clear skies and this particular IRD loses lock typically at 36% SQ.

AU, North Island, NZ

This reminder - reception from Foxtel/Austar C1 Hz is fortuitous at best and of course being virtually all CA, there is no commercial or entertainment value toll any of this - short of importing an appropriate, authorised, IRD from Australia.

New Web site

"Triangle Television has an updated web-site located at <http://www.tritv.co.nz>."

Jim Blackman, Triangle

New uplink antenna

"TBN, Church Channel and JCTV switched to a new uplink antenna for Intelsat 701 (3927RHC, Sr 9.100, 2/3) on September 15. There should have been an increase noted in received signal levels."

Owen Sunnex, TBN South Pacific

Observers may contact Owen at sunnex@paradise.net.nz.

Chip mods OK-Australia

"High Court has ruled consumers modifying Playstation, X-Box (et al) consoles with 'chips' to allow play of out of region software are breaking no Australian laws even if such activity may support pirated copies as well. So what's the difference with STBs?"

John M, Sydney

Contrary to unannounced NZ plans (see Coop's Comment, p. 1), British commercial broadcaster ITV has decided to join forces with government operated BBC to launch a new 'Freesat' digital satellite service. The British have come to the conclusion that stretching the terrestrial UHF band DVB-T service ('Freeview') to reach more than 80% of the population will rapidly become a scenario of minus numbers. Whereas the first DVB-T transmitter serving an estimated 4 million homes cost around ten pounds per home to turn on, the 'last DVB-T' transmitter that might serve ten homes will cost upwards a 10,000 pounds per home. BBC has been providing a 'Freesat' service, as an alternative to the politically powerful Murdoch owned BSkyB service, for more than one year and coincidentally, BSkyB growth has dropped to a quarter of what it was 12 months prior. That such a reaction might occur in New Zealand if the government followed the 'Freesat' model of course is a worry to Sky TV NZ, partially explaining their 'public silence' when faced with questions concerning reaction to the BCL + TVNZ initiative to *cancel satellite* in favour of an all-terrestrial DVB solution for New Zealand. ITV + BBC will provide up to 30 free-to-view channels to essentially every home in the UK, including those too expensive to serve with terrestrial DVB-T 'Freeview' transmitters.

A detailed survey of British non-digital homes indicates as many as 5 million 'will never give up their analogue TV until their RCUs are pried from their finger tips'. In other words, they will not, even if gifted with free digital equipment and installation, abandon analogue. Of interest, more than 70% of those expressing this strong view were 65 years or older leading a British BBC official to suggest, *"If we wait them out, they will all die and then we can get on with this digital conversion."* A BBC sponsored whole-area conversion in Wales earlier this year cost the government an average of 2,100 pounds per home to convert to digital, including the 25% who required new (government paid for) aerials, coaxial cable, and in some instances, TV sets. Forcing this issue on a non-compromising public is not going to be an easy sell. A sizeable number of homes 'really do *not* want more channels' and feel strongly against government intervention into their parlours. *"Before they fix my telly, which is not broken, would someone please repair the pathway in front of my home?"*

PAS-8 Ku distribution of five Zee channels, using the PanGlobal TV platform, is the latest expansion of ethnic programming challenging the Boulos B3 delivered fare. PanAmSat announcement, strangely, includes New Zealand in the PanGlobal PAS-8 footprint - either a mistake, or, rumoured changes in PAS-8 coverage is pending. Zee service channels include Zee TV, Cinema, News, Music and newly launched 'Smile'.

Smaller, Lighter, Unaohm



Measure strong and weak Digital and Analogue TV signals accurately with market leading functions that are easy to use and weigh less. Instruments that leave both hands free so you can ...stand on your hands.



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UNAOHM

Since 1935

VSAT installers needed

"I am in need of South Pacific country installers who can provide service checks to VSAT equipment. They will require at least a technical understanding of TVRO with remote assistance available as local conditions allow. Each service call will be paid for. Capable parties should contact me directly."

Geoff Kong, Port Vila, Vanuatu
(678) 41389 crest@vanuatu.com.vu

Evolution of DVB-T

"As you might suspect, virtually all of the early DVB-T set top boxes were dogs in performance. Unfortunately, we still are sent samples for evaluation which function poorly (in some geographic areas - where signals are not strong) and retain the original lousy menus. But the biggest surprise to me is that some manufacturers, for whatever reason, don't seem to fix these problems - ever! An example was the first HD box (into the) Australian marketplace. It was deaf, required a high quality signal for reliable operation, and was affected by impulse noise. After the first 18 months or so, I recently was told the manufacturer would have no more upgrades; it was what it is! Not too surprising, the original firm went broke, the partners restarted under a new name and that also collapsed. The engineers have been absorbed into a third STB producer. My conclusion is, finding a reliable STB supplier who is willing to work with you to properly satisfy your market needs remains very difficult!"

Peter Lacey, Lacey.tv

It is unfortunate but a fact of economic life that when a product - any product - reaches a volume sufficient to merit the attention of a firm's accountants, they look for a cheaper, 'private label' source.

Sending accountants off to Korea to negotiate 'best price' is akin to asking George W. Bush to allow one of his twin daughters to marry a Muslim. Penny pinching accountants make very poor product buyers.

Friends in high places

"Watching BBC science and technology interview with Sir Arthur C. Clarke, in which he said, 'When the bodies begin to deteriorate, you transfer their thoughts so their personalities could be immortal. Simply save their thoughts on a disc and plug it in!' This guy is my idol!"

Stu Mcleod, NZ

His photos drape the Cooper walls.

HARDWARE EQUIPMENT PARTS

UPDATE

OCTOBER 15, 2005

Web TV distribution continues to expand at a pace which borders on being impossible to catalogue. The driver is two-headed; the expansion of broadband (higher if not 'high' speed) internet adding more than a million new subscriber/users per week (!) world-wide, and, a deluge of 'advertising success stories' which immediately attract the attention of non-web-distributed production houses. With the discovery of 'gold' in the web-world, a mass migration has followed, growing by the day. Examples: WWE's Friday Night Smackdown series was pre-empted by US network UPN because of hurricane Katrina coverage; last minute decision to put it on 'the-web' somehow attracted more than 500,000 die-hard WWE fans. No publicity - just instant notification fan to fan using email and web site postings. Yes, WWE's Smackdown is now permanent on the web. America Online is spending big bucks to create their own web video products, starting with video-on-demand journalistic forays into the 'private' lives of Paris Hilton, Tom Cruise and others of some notoriety. At Yahoo, 'Pepsi Smash', which ran through the North American summer on WB Network, is now a regular. Independent journalists, on their own and not affiliated with any network, are also appearing in great numbers. Example: 'Kevin Sites in the Hot Zone' (hotzone.yahoo.com) follows his travels, adventures and documentary revelations in such glorious spots as Somalia. One of the particular attractions to advertisers is the internet ability to exactly count the number of viewers - whether as a group such as WWE Smackdown, or using 'on demand' loading. Free to air advertising places confidence is audience sampling surveys (such as 2,000 locations determining the viewing habits for an entire country); not an exact science. Currently, advertisers are being charged between \$15 and \$25 per thousand 'viewers' on Internet, slightly ahead of what major networks charge for 'estimated viewers' based upon limited reach surveys. What's next, other than new programmers 'signing on' daily? Video search engines - Google-for-video software allowing would-be viewers to identify programming sources from what a Yahoo executive is already labelling, 'The Million Channel Universe'.

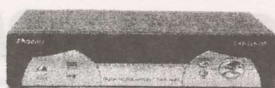
Not to be left behind, MyBBCPlayer heading for 2006 launch will allow viewers to download all BBC schedules for up to seven days after they air on FTA TV (that includes, in their case, FTA terrestrial analogue, 'Freeview' terrestrial digital, 'Freesat'). BBC also plans to make 'video clips' available via 3G cell phone networks and to produce exclusively for web viewers programming which for whatever executive reason does not find air time on FTA distribution platforms. One example: A BBC series (Shakespeare) in production is a new 'model' - extra segments are being shot during production which will be available separately only via the web, or in the case of cell phones, as 'clips'. At 3PM November 2, BBC-TV will be 69.

Phoenix Technology Group

Satellite Equipment & Accessories One Stop Supermarket



Phoenix 2.35m Motorized Extra Heavy Duty Mesh **\$180/each**
Buy 10 get one free



Phoenix 2800A \$130
The Best FTA Satellite Receiver On the Market



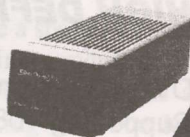
Dreamax DT470 \$160/each
Irdeto Embedded Satellite Receiver



Zinwell 15K LNB \$25/each
for box of 24



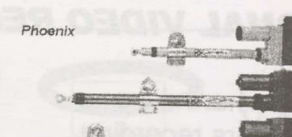
Moteck SG2100 Motor \$105/each



SuperJack EZ2000 Positioner \$50/each



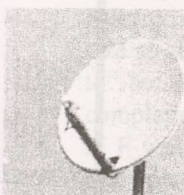
Moteck V Box II DiSeqC1.2 Positioner \$65/each



Actuator from 12' standard duty to 36' heavy duty
From \$35/each to \$220/each



RG6 Cable Dual shield \$65/box
Quad shield \$75/box



Foldable Arm Dish best one for caravan & mobile people
64cm \$25/each
78cm \$48/each
88cm \$55/each
North bracket \$5/each

Irdeto 2.06B CAM	\$110	PBI C+Ku band LNB	\$65
Viaccess CAM	\$110	Zinwell C band LNB	\$30
65cm Azure shine offset dish	\$25	Zinwell Ku band LNB	\$25
75cm Azure shine offset dish	\$30	MTI C band LNB	\$25
85cm Azure shine offset dish	\$35	MTI one cable solution LNB	\$45
One leg gutter mount	\$18	Satellite finder	\$25
Two leg gutter mount	\$22	RG6 stripper	\$20
Tin roof mount	\$22	RG6/RG11 crimper	\$30
Wall mount	\$15	Angle meter	\$35
Superjack H-H motor	\$95	Compass	\$5
2.3m SD mesh dish	\$150	RG 6 Crimp Connector (100)	\$25
3m SD mesh dish	\$295	22K switch	\$10
3m HD mesh dish	\$330	Two way DiSeqC switch	\$10
3" 2.5m galvanised pole	\$30	Four way DiSeqC switch	\$12
3" 3m galvanised pole	\$35	Satellite 2 way splitter	\$1.50
3" 3.5m galvanised pole	\$40	Satellite 3 way splitter	\$2
3" Triangle Pole for C band dish	\$50	Satellite 4 way splitter	\$2.5
Speaker Stand for caravan use Ku dish	\$45	4 way multi-switch	\$35

Best performance



Paralipses 1.2m prime focus panel dish

\$730

(\$146/each x 5)

AZ/EL mount \$32/each



Easy transport

Paralipses 2.6m mesh dish

\$1500

(\$300/each x 5)

Last stock mesh dish from USA

Multi-beam 1m offset dish

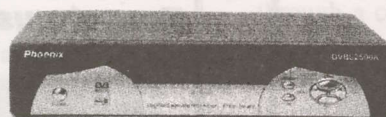
Ku band satellite from Optus B3 + Optus C1 + Pas 8 + Pas 2
Just one dish to receive all

\$150/each

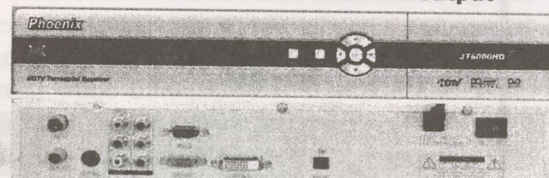
Up to four LNB 30 deg. wide



Phoenix JT3300A Digital Terrestrial Receiver \$110/each



Phoenix JT6000A High Definition Digital Terrestrial Receiver with DVI output



This Month Trade Special

Optus B3/Pas 8 Free To Air channel Package

Phoenix 2800A digital satellite receiver x 5
64cm foldable arm dish x 5
Zinwell 11.3GHz/10.7GHz/universal Ku band LNB x 5
Gutter mount/wall mount x 5
One box of RG6 cable

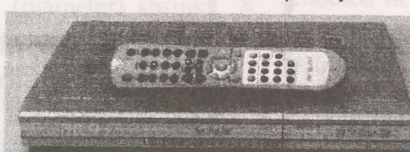
\$975 (\$195/each x 5)

Optus B3/Pas 8/Optus C1 Irdeto embedded channel Package

Koscom 1600A Irdeto cam embedded digital satellite receiver x 5
64cm foldable arm dish x 5
Zinwell 11.3GHz/10.7GHz/universal Ku band LNB x 5
Gutter mount/wall mount x 5
One box of RG6 cable

\$1275 (\$255/each x 5)

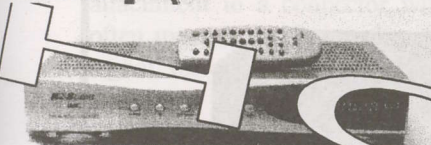
Magix 9600 Digital satellite receiver with embedded cam + 2CI \$160/each



C band free to air channel Package

Phoenix 2800A digital satellite receiver x 5
2.3m SD mesh dish x 5
Zinwell C band LNB x 5
3" 3m galvanised pole x 5
One box of RG6 cable

\$1975 (\$395/each x 5)

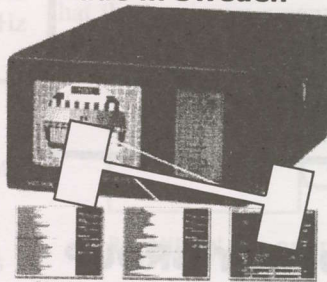


Koscom 1600A Irdeto Embedded Satellite Receiver \$200 with free Optus Aurora card
Buy 10 or more and get 5% discount & one box of 305m RG6 cable for free

SATLOOK Digital NIT \$1395

- Satellite-receiver 920-2150 MHz.
- Spectrum-analyzer with expanded spectrum.
- Digital BER, QPSK and S/N-ratio.
- 4.5" B/W monitor for PAL/NTSC/SECAM.
- Tuneable sound 5.5 - 8.5 kHz.
- LNB voltage 13/18V, 22 kHz tone switch.
- DiSeqC control (1.0, 1.1, 1.2).
- KU- and C-band (normal/inverted video).
- 99 memory-positions for spectrum pictures.
- Satellite identification.
- Symbol rate 1-30 Msymb/s.
- RS 232 for PC connection.
- Built in, rechargeable battery.
- Only 5 kg complete with carrying-case.
- Transponder content analysis.

Made in Sweden



SATLOOK COMBO \$2295

- The combination of SATLOOK Digital NIT and TVLOOK
- Input frequency: 2-900 MHz and 920-2150 MHz
- 4.5" B/W Monitor for PAL/NTSC/SECAM
- Lots of memory positions for spectrum pictures
- RS232 for PC-connection
- Built in, rechargeable battery. Only 7kg complete with carrying case
- TV-PART:
 - 2-900 MHz spectrum analyzer
 - Presents full range spectrum (and expanded)
 - Very high accuracy, $\pm 1\text{dB}$ (at 20°C)
- SAT-part:
 - 920-2150MHz spectrum analyzer. Digital BER, QPSK and S/N-ratio
 - Satellite-ID and TV/Radio-channel info (NIT)
 - Tuneable audio bandwidth 5.5-8.5MHz
 - LNB voltage 13/18V, 22kHz tone switch
 - DiSeqC according to level 1.0, 1.1, 1.2
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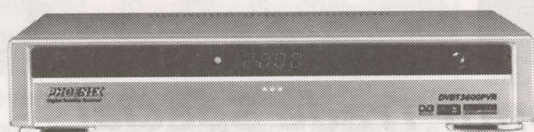
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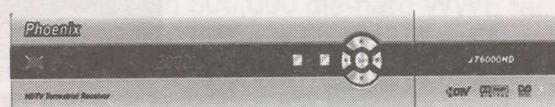
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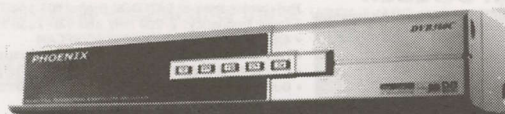


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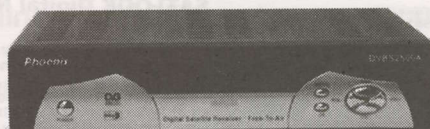
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It is all about connector integrity

Compression (F family) connectors are a special segment of what should on the surface be a no-brainer product selection procedure. The original F connector was created as a 'C' (letter proceeding F) by engineers working with The Jerrold Electronics Corporation in the mid 1950s. Prior to the F, C size at about 60% the physical dimensions of the later F had to be laboriously affixed to oversized cables with a complement of soldering tools. The primary initial advantage of F was that it at least matched the size of RG-59/U cable (the predecessor to today's RG6) and this led to the development of installation procedures using two piece (F) connectors and a crimping tool. For more than ten years after F appeared, the outer sheath of the cable was 'squashed' with a slip over 'O-ring ferrule' that arrived as a second, separate part to the body connector. By the mid 60s, the first one-piece (integral) F connectors appeared, eliminating the difficult to install O-ring-ferrule as a separate piece.

Unfortunately crimping tools seldom (if ever) created a perfect fitting grasp of the cable's outer ('shield' or braid) segment: more often than not, as the separate (or attached) shield crimping metal was 'sucked up tight' by the crimper, bulges formed leaving as much as 50% of the braid/shield still out of direct contact with the metal of the connector.

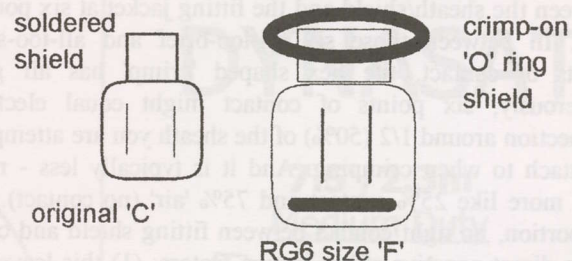
Eventually (but not very rapidly) this led to the creation of a new category of F connector and to use it a new design of 'crimping tool'. Rather than grabbing and 'shutting' the outer O-ring under pressure from the crimping tool, the new connectors 'compressed'. Think of a balloon filled with air, and now let some air escape. The sheath of the balloon remains taunt while the overall size (diameter) shrinks. A compression fitting has a very similar response when it is subjected to the precision designed crimping tool; it collapses inward, evenly with a taper, around the full 'circle' and ends up retaining not only its own shape but the shape and snug fit of the cable's shield. Now the electrical connection between cable shield and connector shield approaches 100%.

Major signal degradation causes

The primary degradation when an F fitting is improperly designed, or poorly installed, is a loss in signal thru-put. In a multiple channel environment, a poor shield/sheath attachment to a connector will appear as a loss of signal, often most at the lowest frequency being carried; a 55 MHz signal, for example, will lose more 'thru-put' than a 500 MHz signal.

Report created by Laurie Mathews, Mathews Electronics, Auckland (outside of NZ, ++64 9 634 5130; within 0800 777 376). Mathews is the NZ agent for the popular world-class Stirling F connectors.

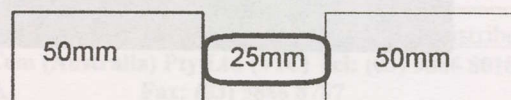
Editor's note: A return to 'basics' here; yes, Laurie does sell a particular brand of top-quality connectors and a case might be made for this being a self-serving bit of editorial space. *It is not* - as anyone who has ever spent hours chasing a 'bad fitting' can attest.



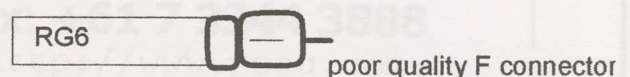
And when a shield/sheath is not properly 'continuous' through a connector, this allows signals outside the cable to seep in (ingress) while simultaneously signals inside of the cable (as in being transported by the cable) will leak out (called egress).

The second most likely undesirable subset to a poor connector is moisture ingress. A connector does not have to be immersed in water (such as sitting in the bottom of a puddle) to seep moisture. The inner part of cable will always be a few temperature degrees warmer than the outside, and on a cool or cold night, moist air will 'flow' in and out of a loosely assembled fitting. Air with moisture attached (a function of the humidity and 'dew point' of the air) actually deposits tiny water droplets inside of a connector as the cable cools at night, warms in the daytime. Of course if the connector is actually 'soaked' by rain, well, good luck.

And then we have impedance match - that grey area of comprehension for those who have not been properly schooled in electronic technology. It is essential, for satellite (or terrestrial) signals to 'flow' through cable (and connectors) that the point of origin 'impedance', the cable 'impedance', the connector 'impedance' and finally the reception device (such as IRD) all be as close as possible to the standard 75 ohms 'impedance'. One or more F fittings, between 'origin' (such as LNBf output) and 'load' (the IRD), poorly installed, poorly designed, carelessly protected from moisture ingress, will vary from 75 ohms - kind of like sticking a 25mm plastic water system 'joiner' in a 50mm diameter line (in which case the maximum water pressure past the 25mm joiner will be half of the original flowing in the 50mm pipe). Impedance is just that - 'matching' devices installed 'in the same line' so that the maximum amount of electrical energy coming from the origin (LNBf) arrives at the end of the line.



'throttling' the energy whether water or signal



A 'hex' on Hexagonal crimps

Virtually any F fitting has a works-best-with-specified-crimping-tool; whether a 'compression' fitting or one of lower quality. A 'hex' format crimper grasps the F fittings outer to-be-crimped sheath cover and when pressure is applied, it creates six more or less equal dimension sides; think of a child's drawing of a star. Unfortunately, the original RG6 cable sheath does not have six sides, it has one - continuous- circumference. A 'hex' crimper makes contact between the sheath/shield and the fitting jacket at six points - only. In between those six all-too-brief and all-too-small points of contact, the hex shaped 'crimp' has air gaps. Generously, six points of contact might equal electrical connection around 1/2 (50%) of the sheath you are attempting to attach to when crimping. And it is typically less - much less; more like 25% contact and 75% 'air' (no contact). The air portion, no tight contact between fitting shield and cable, has a direct negative effect on two factors: (1) this leaves six 'holes' for moisture to ingress, and, (2) the lack of contact between cable shield and connector shield will cause impedance problems with the thru-flow of electrical (signal) energy. The 'evenly spaced' air holes, no contact, result in higher fitting (dB) losses as the frequency of the system increases; UHF is higher loss than VHF, L-band is higher still.

Compression

The answer to this problem is 'compression' - the equal and continuous 'shrinking' of the connector shield portion down around the outer braid covering of the RG6 (or RG11 for larger diameter installations). A compression connector works by telescoping the outer portion of the fitting from the

end (the connector proper) back to the end of the fitting's outer edge. A compression connector should be manufactured using high quality beryllium copper to improve electrical conductivity (the flow of satellite or other radio frequency energy). And, a properly designed compression fitting when installed with a suitable 'compression crimper' turns the connector into what amounts to 'a 75 ohm impedance' extension of the cable proper; the characteristics of the connector are virtually identical to the cable, making a 'seamless' transition into and out of the connector proper, with a water proofing 'O' ring on the screw-on portion of the connector proper to complete the moisture protection. An installer can tell if he has installed a compression properly: Grab the cable at the connector end, extend your arms and grab the cable going towards the opposite end. Now, pull hard, tug on it. There should be no flexing or movement of the cable as it enters the compression installed fitting.

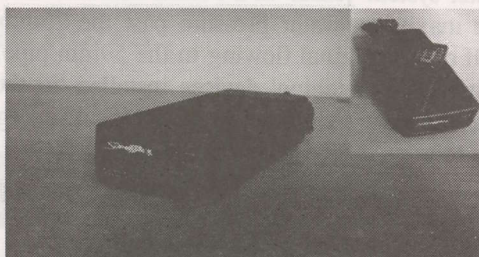
The weakest link

Any aerial/antenna + cable installation will only perform as well as the weakest link - remember what happens if you insert a 25mm plastic joiner in a 50mm diameter water line. There goes the pressure! Satellite signals represent 'electrical pressure' and the RG6 or other line you are installing performs the same function as your 50mm water line. Cheap cable (anything less than quad shielded representing at least 100% shield coverage is 'cheap') and cheap fittings installed with inappropriate crimping tools are the bane of installers. Do it right the first time - it may cost a few cents (even a dollar) more but isn't that better than being called on to drive 30km to fix a fitting that was shoddy to begin with?

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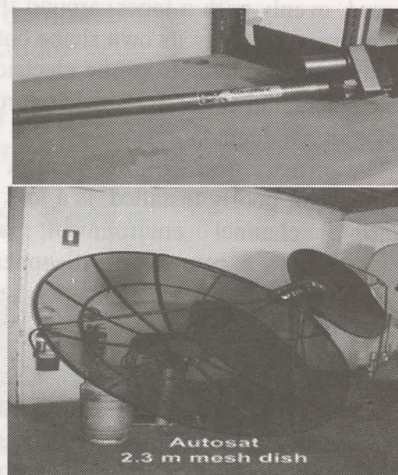
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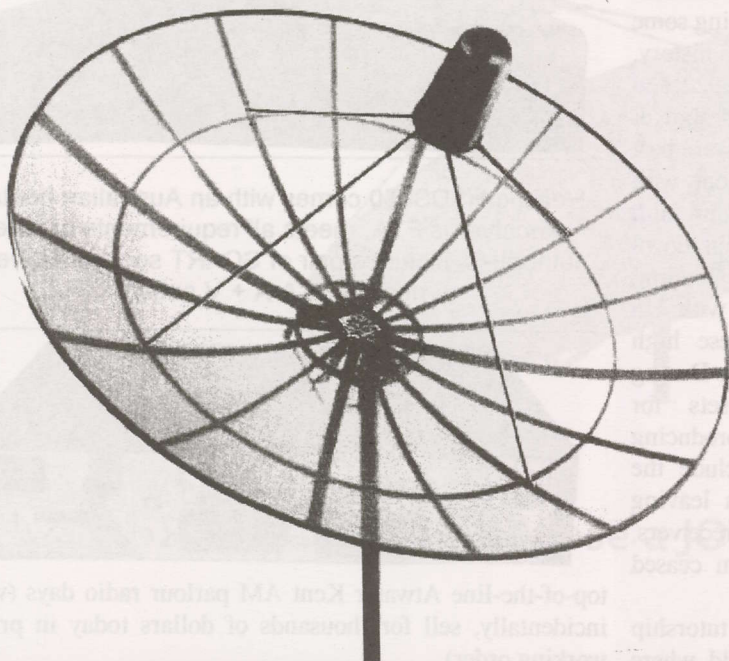


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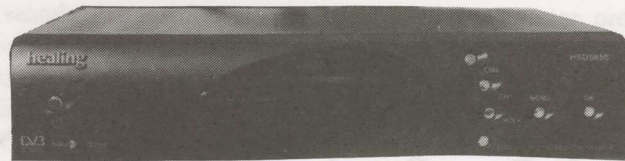
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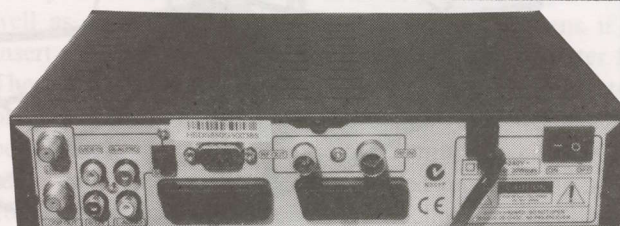
One of two new MPEG-2 receivers from Lacey's.tv

If Healing seems like an unusual name for a line of satellite (and terrestrial; see p. 18) set top boxes, you are missing some tidbits of Australian reception equipment history. Commercial broadcasting in Australia launched in 1922 and Alfred George Healing began producing his own design of AM radio sets. By 1925, his 'Golden Voice' models were best sellers, largely built around an importing agreement with various US designers. In 1930, the Commonwealth government adopted regulations that essentially shut down the mass importation of receivers and speakers. Healing responded by taking out a manufacturing license with US brand leader Atwater Kent and he produced these high quality AM receivers under the 'Healing' brand name. During World War Two, Healing produced radar sets for Commonwealth forces. In 1956, Healing began producing television sets as well. However, the future would include the Commonwealth rescinding import tariff protection leaving the Australian market vulnerable to imported receivers, primarily from Japan and Asia. In 1975, the firm ceased trading.

But the name lives on, 30 years hence, under the tutorship of Lacey's.TV; a clever bit of marketing in a world where brand names almost never have a connection to anything memorable. The HSDS850 is a free to air STB, a refined product which fits well into the 'branding' dating back to the

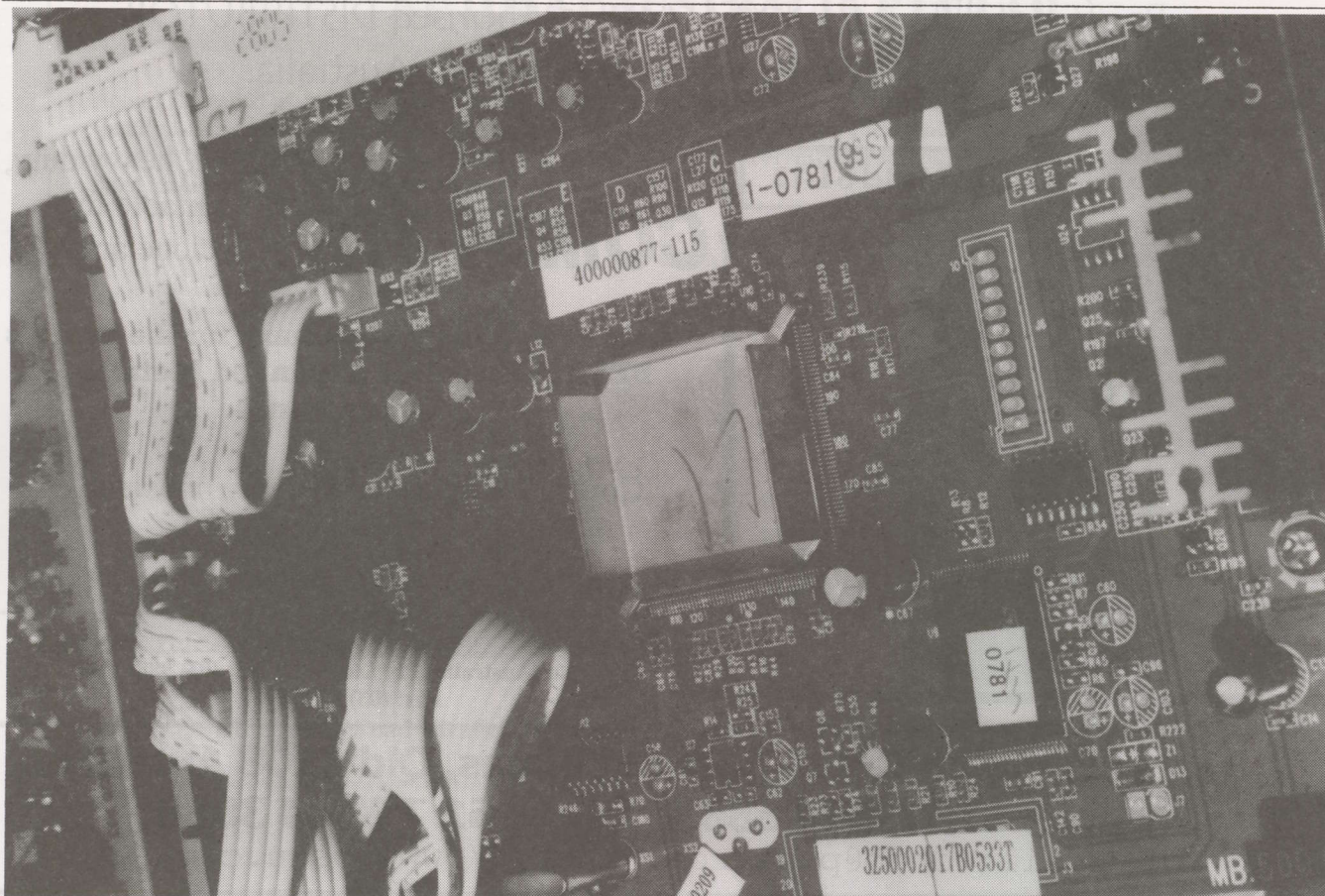


Healing HSDS850 comes with an Australian heritage. Receiver is FTA, meets all requirements of safety authorities, includes pair of SCART sockets as well as normal RCA A + V outlets.

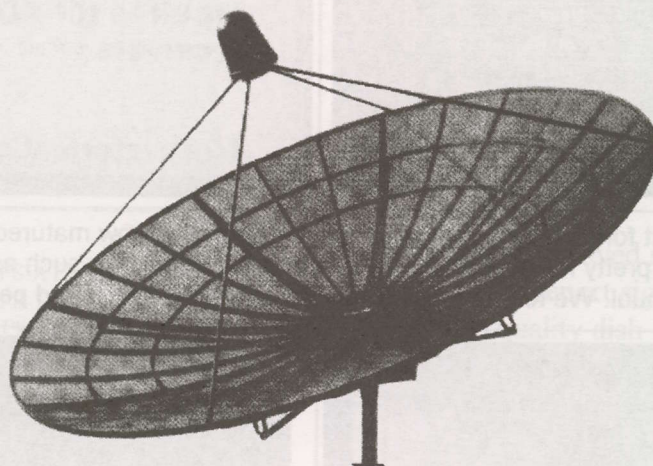


top-of-the-line Atwater Kent AM parlour radio days (which, incidentally, sell for thousands of dollars today in pristine, working order).

As software improvements have steadily made STB operation more comfortable for the typical consumer, each new generation has managed to close a gap between function



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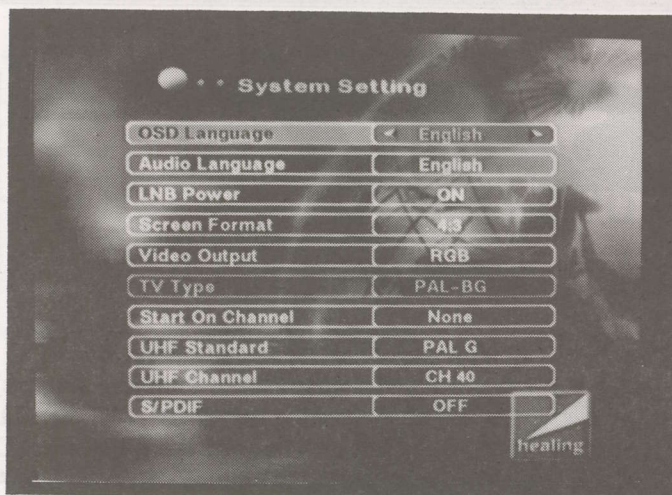
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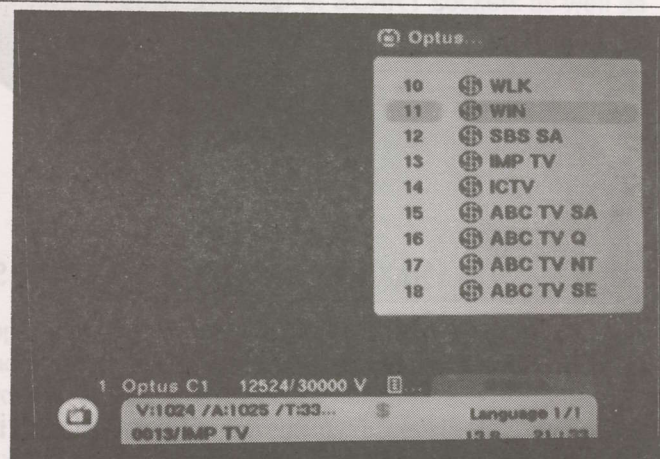
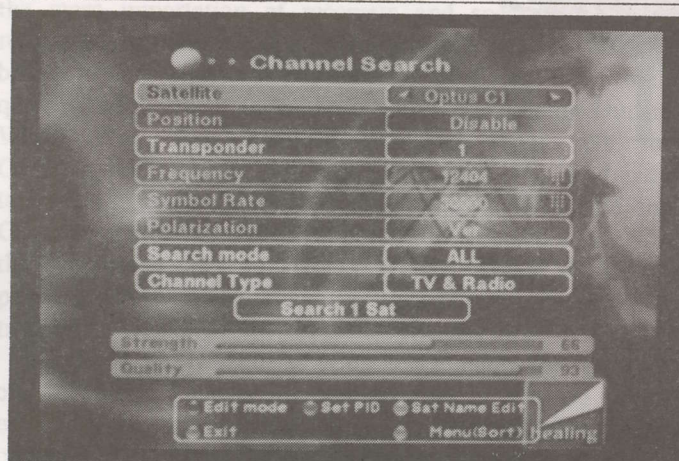


Aurora Changes for ABC services (excluding WA) between 7 August - 10 August 05

7 August - 8 August 05
Rearrangement of ABC SA, Qld, SE and NT TV & radio services. No intervention required for ADB, Panasonic or UEC receivers

More information follows

Menu digging is straight forward, a 'standard' of menu design has now matured to a level that allows anyone proficient with one brand to pretty much work their way through newer IRDs such as the Healing without cracking the (well written) manual. We tested on FTA Ku as well as C-band, found performance very good on both.



and performance we could but dream of as recently as two years ago.

You can fire this IRD up without cracking the manual, and make it play; it will be your loss as there are some clever 'improvements' here which you will overlook. Set-up is as simple as connecting an appropriate antenna and LNB, turning the IRD on, and viewing a pretty standard menu. Antenna Setup is a good starting place, covering the name of a starter satellite, LNB format and frequency (LO or local oscillator; 5.100 for C-band, 11.300 or an appropriate 'Universal' number for Ku), switching instructions (0/12V, 22 kHz tone or DiSEqC 1.2). At this point the installation makes the next decision: A dish mover requires you to follow through the DiSEqC steps while a fixed dish short circuits

settings such as 'limits' (marking where the dish mover should stop energising). In a 'fixed dish' installation, after selecting a satellite (which leads to the IRD's prestored memory of transponders and parameters for each) the receiver search initiates rewarding you with a 'locked and loaded' channel list. From there the found channels/transponders are stored allowing you or someone else to recall them and go directly to that service.

In a motorised mount (DiSEqC control) installation, the procedure is very similar except of course because there are multiple satellites, each satellite retains its own memory file. And the receiver retains, after DiSEqC installation, the satellite's in-sky location; when you select a channel on a satellite different from where the dish is pointed, memory automatically redirects the dish to the new satellite.

Healing HSDS850 Factory specifications

(1) DVB, MPEG-2; (2) L-band coverage 950-2150 MHz; (3) Input signal range -65 dBm>-25 dBm; (4) Symbol range 2 to 45 Mbaud; (5) FEC automatic search; (6) Switching - 22 kHz; (7) LNB powering +13V dc, + 18V dc to maximum load of 400 mA; (8) L-band input - standard F, looping output for second receiver; (9) SCART - 2, one for VCR, one for TV; (10) Baseband video output alternate - RCA socket; (11) Baseband audio - stereo, dual mono, joint stereo and mono (RCA sockets); (12) Video processor - 64 Mbits SDRAM, 15 Mbit/s data rate; (13) Video output - PAL-25 fps at 720 pixels x 576 lines, or, NTSC 30 fps at 720 pixels x 480 lines; (14) Video format - 4:3 or 16:9, selectable; (15) Microprocessor - STMicroelectronics STi5518; (16) SDRAM - 8Mbyte; (17) Flash Memory - 2Mbyte; (18) UHF modulator, selectable PAL B/G or PAL I; (19) DiSEqC - version 1.2 to 63 satellite locations; (20) Channel storage - up to 4,500; (21) PIG - Picture in graphic; (22) Separate control mechanisms for C and Ku antenna(s); (23) Network Auto Search for newly activated transponders, services; (24) EPG; (25) OSD Teletext; (26) VBI Teletext; (27) RS-232 software upgrades; (28) Parental lock; (29) Separate radio and TV modes; (30) Timer control for on and off; (31) Default password - 0000; (32) Powering - 100-240V ac, 50 to 60 hertz +/- 5% (i.e. 47.5>63 hertz); Source: Lacey's.TV, sales@healingdigital.com and www.healingdigital.com.

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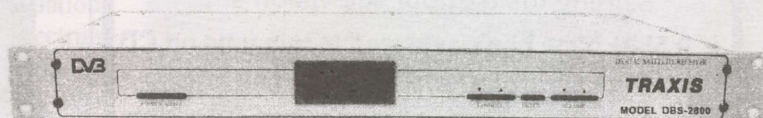


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The launch of cable television in America (he missed this one by only three years), the infamous 'All American Sports Amplifier' professional sport 'blackout buster', the design and development of VHF translators extending television to rural regions too distant for home reception; it is all here, including the insider stories that made the era from 1950 onward such a pivotal period in the world development of television. The technology, the lawsuits, and the personalities as told by the only human being who lived and witnessed through it all.

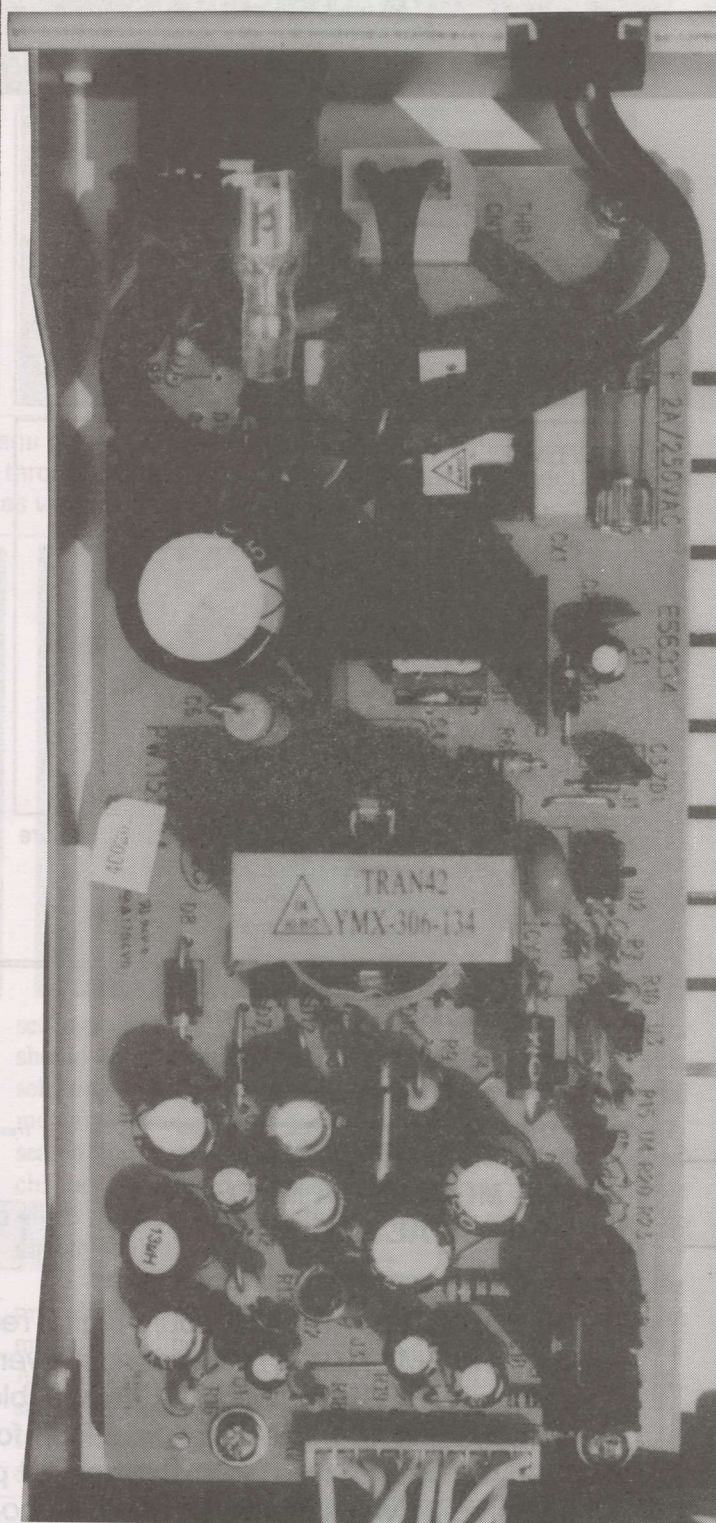
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HSDS850 power supply is straight forward and serviceable should the need arise. Note fuse has been placed where stubby fingers can reach it (upper right)!

There are two interesting 'wrinkles' to the HSDS850 dish controller software. First, there is a 'dish fine tuning' control which allows the user to peak the dish on any in-memory satellite should something (such as heavy winds) cause the dish mover mechanism to 'drift'. A second is a antenna positioning assist bit of software. By entering your geographic co-ordinates (longitude and latitude) as well as the name of a satellite, the receiver will 'calculate' the elevation and azimuth angles for the dish to point, providing instant antenna pointing correction information

Receiving and relaying off-air FM within first fresnel zone coverage

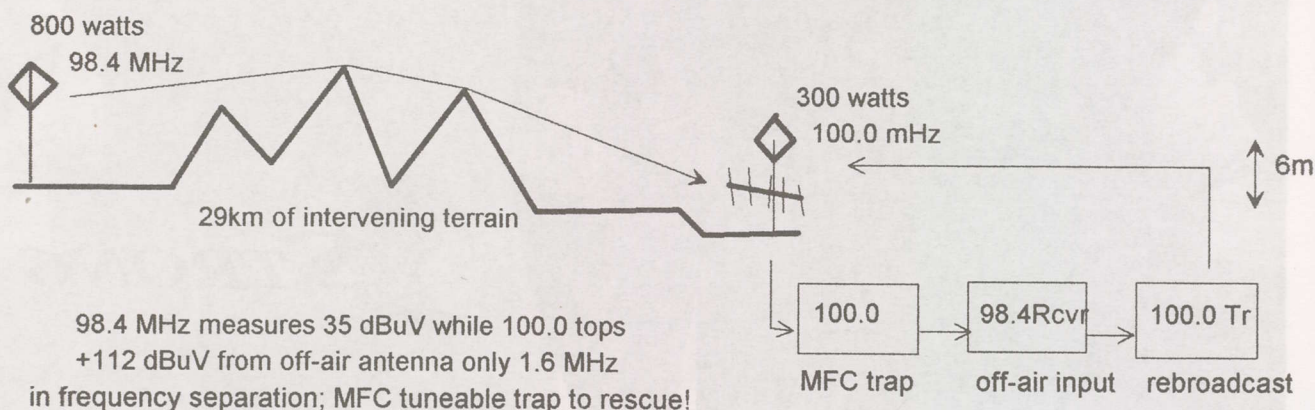
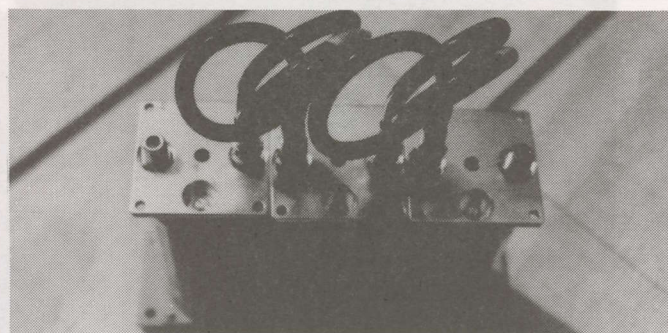
This is one of those field problems which often defies solution; 'walk away - this is too tough'. Here is the situation. A FM broadcaster, on 98.4 MHz, needs to be relayed by a fill-in transmitter because intervening terrain makes direct reception by auto and indoor FM receivers spotty if at all. The least expensive solution, short of going to the top of the intervening terrain (ridge of hills) and creating a 'STL' (UHF studio transmitter link) to bridge the distance, with LOS or near LOS in both directions, is to use a sizeable receiving antenna to take 98.4 off air at the site of the rebroadcast transmitter (on 100.0 MHz), process the audio and plug it back into the fill-in transmitter. Space is limited at the rebroadcast site, mandating the 98.4 receive antenna and the 100.0 rebroadcast antenna must share the same mast and in fact be around 6 metres (vertical separation) from one another. The 100.0 MHz transmitter runs at 300 watts, dumping a very sizeable 100.0 signal directly into the FM receiver trying to receive 98.4.

And while it is possible to replace IF filters in a suitable FM tuner (using a narrower bandpass) to 'sharpen' the selectivity of the 98.4 receiver, the broad banded non-tuning RF amplifier stage in the tuner (virtually any modern receiver) simply cannot handle the abundance of 100.0 signal; cross modulation (desensitisation of the tuner) results. The answer is the 100.0 112 dBuV signal, travelling just 6 metres from transmit antenna to receive antenna, needs to be selectively attenuated.

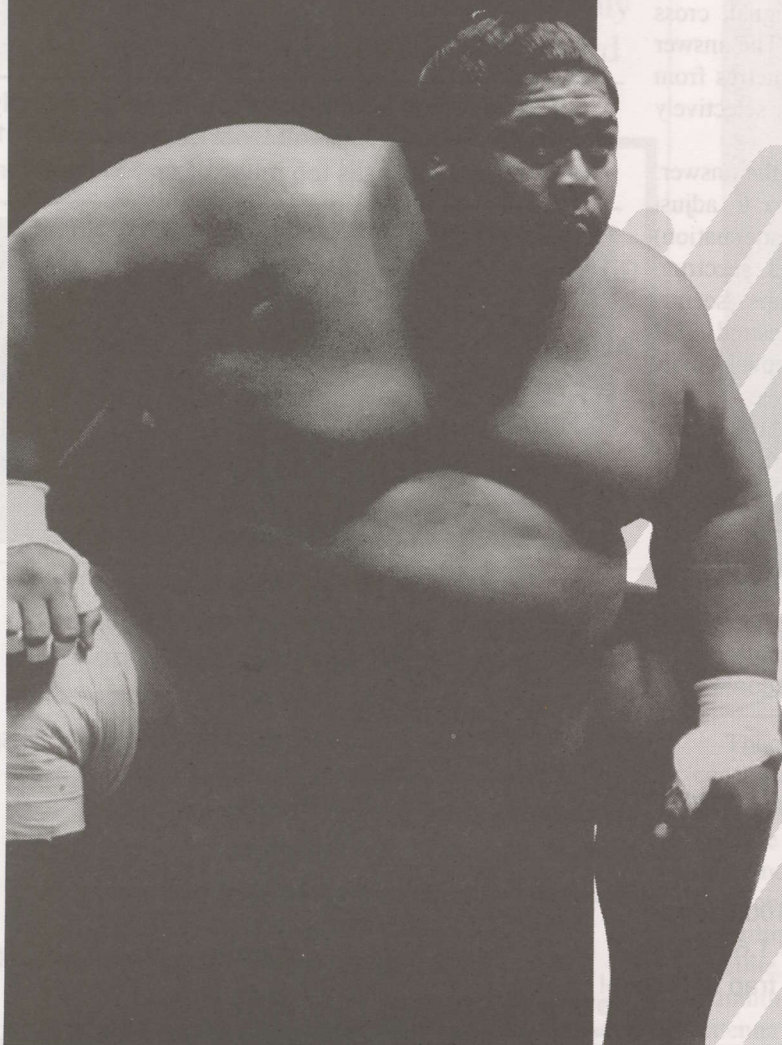
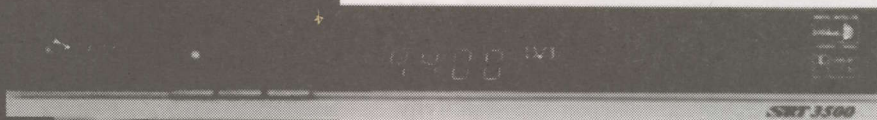
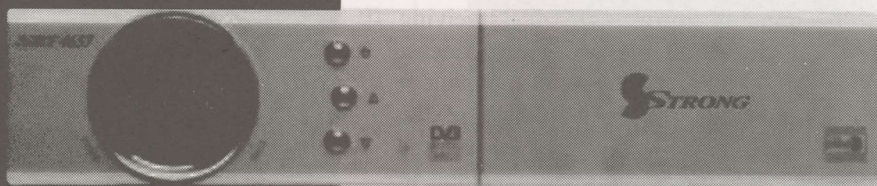
The MFC model 6367 3 stage tuneable trap is the answer. Individually, the cavity design device allows you to adjust each of the three stages for maximum reduction (attenuation) of the 100.0 signal. This is best done with a spectrum analyser because as you adjust the individual traps, 'seeing' both the non-desired 100.0 as well as the desired 98.4 simultaneously is important (adjusting the individual cavity traps 'rolls' through a spectrum display; you see it 'pass through' the desired 98.4, then move upward to 100.0, and beyond. Microwave Filter offers a variety of models, from 1 to infinite cavities, capable of varying 'notch' bandwidths from 50 kHz upwards to 8 MHz reject. Yes, it works!



Off-air antenna (98.4 MHz; #1) is 6 metres directly below 100.0MHz x 300 watt local transmitter (#2); 1.6 MHz 'separation' asks too much of an FM receiver.



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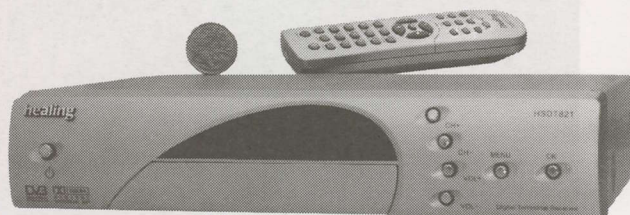
Healing HSDT821 works well with BCL/TVNZ terrestrial tests

New Zealand's government has delayed a formal transition from analogue to digital although as this issue goes to press, the latest in a series of proposals is winding its way through the free to air broadcasters led by government owned TVNZ (Television New Zealand); see Coop's Comment, this issue. TVNZ, the broadcaster, relies upon the technical services of BCL (Broadcast Communications Ltd.), another government operated business, to supply transmission equipment, sites and inter-site linking throughout the country. Just under 500 TV One transmitters (from 1/10th watt to 100,000 watts) dot the landscape resulting in service to something more than 98% of the geographically challenged islands.

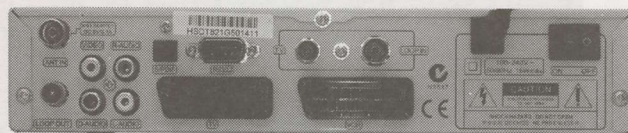
For several years, BCL has operated a 1,000 watt Auckland region DTT/DVB-T transmitter from the heavily populated Waiaura transmitter. SatFACTS supplied me, originating at Laceys.TV, a Healing HSDT 821 terrestrial STB, for review and testing. Until this point, my only means of checking and viewing the BCL COFDM (format) tests was to use my Promax P4 + C spectrum analyser which is equipped with an internal COFDM (FTA) circuit. The current transmission parameters are UHF channel 49, 8 MHz channel bandwidth, 8K carriers and 1/32 Guard Interval (64QAM, code rate 3/4). These 'numbers' are similar to (but not the same as) Sr (symbol rate) and FEC 'standard' in satellite digital. COFDM is a standard originating in Europe, and selected in Australia ; it is also the NZ 'standard' for terrestrial digital.

Shortly after setting up the STB I made my first and only mistake (no, avoiding the instruction manual was deliberate - to validate ease of operation which, by the way, I found straight forward). On the HSDT 821 you must tell it 'where to start' - which TV channel to load. Channel 49 in an analogue world has a visual carrier frequency of 695.25 MHz. Alas, in the digital world, an 8 MHz channel width is a sizeable spectrum and BCL has elected to place the 'centre' at 698.00 MHz (logical as channel 49 ranges from 694 to 702 MHz).

Report filed by Steve Johnson, Satcom (NZ) Ltd.;
steve@satcom.co.nz.

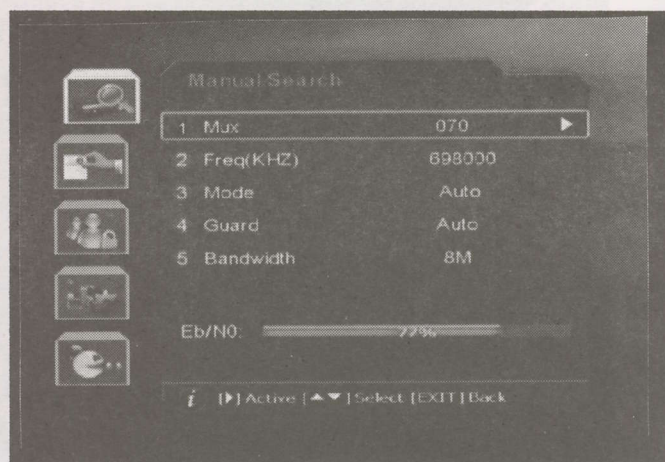
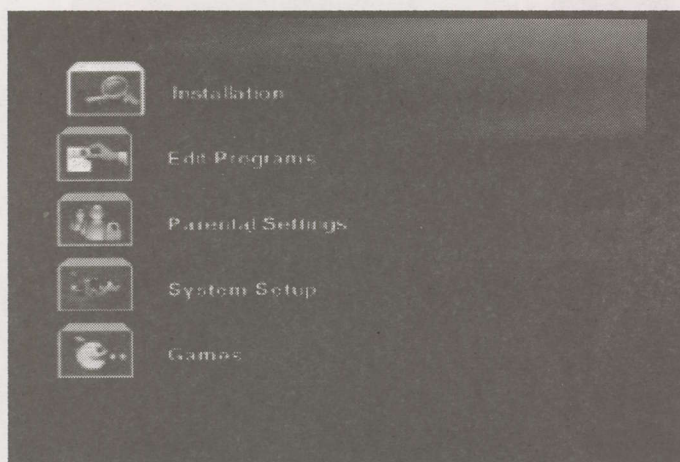


Healing digital terrestrial STB (HSDT 821) is state of the art consumer box. Our tests found it works well, has a suitably low threshold, and produces 'DVD-quality' images with appropriate inputs.



Once the correct frequency had been entered and search initiated, there were pretty images dancing on the screen in seconds. The only parameters required for initialisation are the channel width (8 MHz in NZ) and operating centre frequency. The guard interval and carrier mode, if not known, will be found automatically by the Healing STB. Of interest, hardly a defect, while the input channel width can be set from 6 to 7 to 8 MHz, the output (UHF) modulator is PAL-B's 7 MHz bandwidth.

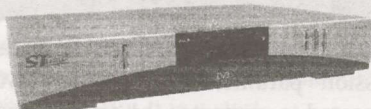
Next stop, local retailer 'Findlays Betta Electrical' where the STB could be connected to a Panasonic consumer world plasma screen. Their rooftop (UHF) aerial might be suspect - my personal belief is a very high percentage of pre-existing outdoor antennas (cable, matching transformers) will require replacement when DTT/DVB-T finally does arrive in New



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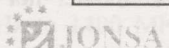
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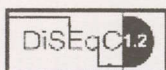
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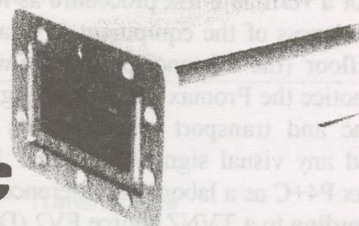
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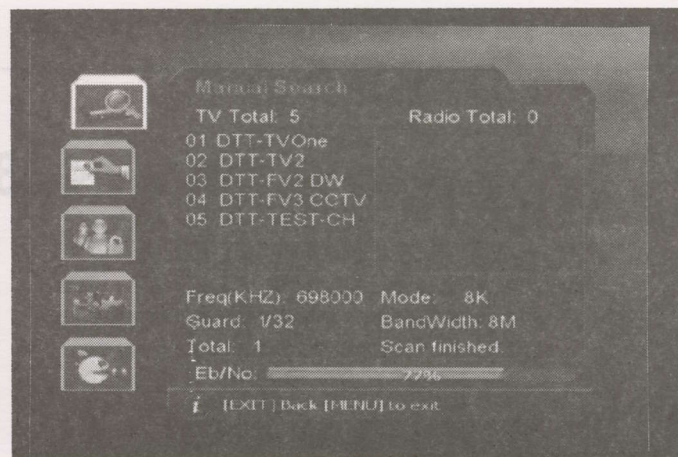
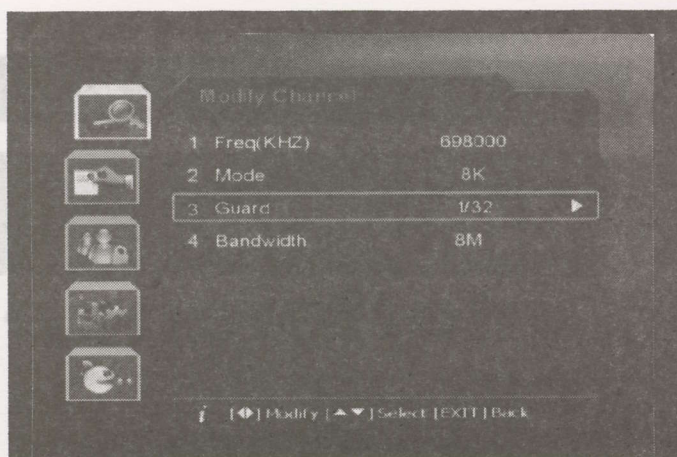
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Web:

<http://www.microwavefilter.com>



Zealand; as someone with two decades of professional aerial system experience, I foresee a not insignificant bulge in new business when digital finally does arrive. On the plasma 50", 'blocking' (portions of the image locked stable while around it the scene continued to move) was not very impressive on (programme channels) FV2 and FV3. The same reception on a standard smaller screen CRT grade set was marginally better, but digital picture impairments are no less acceptable from terrestrial than from satellite. TVOne and TV2 were an improvement and the TVNZ 'widescreen test' was actually impressive. Perhaps I caught TVNZ on a bad day as adjustments of the data stream flow on their end could also account for what I saw.

What about STB sensitivity? We have been told (and retold) that whereas an analogue signal requires something more than 40 dB of signal over noise to be essentially fault-free, the 'digital threshold' is much lower; someplace between 18 and 22 dB as a function of the STB tuner sensitivity and software. I performed a crude threshold test by installing a variable inline 20 dB attenuator and then a 2 way splitter to feed the Healing STB on one side, the Promax Spec Analyser on the other. The first signs of pixelation occurred when the signal level was attenuated to approximately 22 dB (C/NR) with complete loss of (and a freeze frame) at 14 dB C/NR. This was not a verifiable test procedure as it was impossible given the crudeness of the equipment to establish and measure the 'noise floor' (the reference point from which noise is derived). I did notice the Promax was indicating incorrect packets, loss of sync and transport stream errors well before the STB showed any visual sign of problems. But, who would use a Promax P4+C as a laboratory reference standard, anyhow?

According to a TVNZ source FV2 (DW) and FV3 (CCTV9) are currently running at a data rate in the region of 3 Mbit/s, TVOne and TV2 at approximately 5 Mbit/s while a wide screen test (looped programming) runs near 8 Mbit/s. Any problems with reception (including my observation of

blocking at the local retail outlet) appears to be associated with the transmission parameters - in other words, the amount of data allocated to compress the original video/audio signal into DVB MPEG-2 format. This is most evident when viewing the 8Mbit/sec stream which I judged to be near to (if not at) 'typical' DVD quality (yes, at 8 Mbit/s the 'numbers all fit'). I would suggest it be a reasonable marketing ploy for TVNZ to utilise the higher bit rate transmissions, forgoing 'quantity' for the sake of quality. When (not if) the day comes when Harvey Norman and other retailers are routinely 'showing off' widescreen displays from local TVNZ DVB/DTT transmitters, it will in my humble opinion be the 'DVD quality' of the image on larger screens which will cause the consumers to open up their savings accounts for a brand new digital receiver. It might even give Sky's limited data rate transmissions a run for their money and please a growing level of consumers who purchase a middle to high end large screen TV and then realise, once it is home in their parlour, that it 'looked better' in the shop primarily because it was displaying a DVD movie, not TVOne (or other broadcast service).

As for the Healing unit, it works very well, is easy to set up (and the manual, which I finally did read, is well done) with a logical menu structure. The source for this is Laceys.TV: Laceys.TV, sales@healingdigital.com and www.healingdigital.com. I would recommend this STB to anyone within range of the present Auckland region BCL test transmitter who wishes to get their feet wet with the realities of digital terrestrial (1).

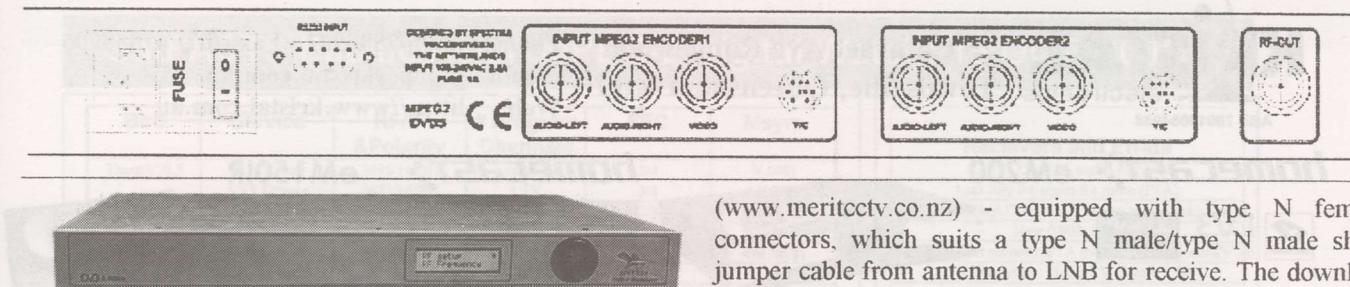
1/ Craig Sutton's website (<http://www.apsattv.com>) carries frequent observer updates concerning the BCL tests; an estimated 150-200 terrestrial STBs are in service in the Auckland region, the majority hand placed by TVNZ.

Fully compliant DVB-S on your bench

Creating your own local MPEG-2 Digital Package

This falls someplace between a really fun thing to do and a possible business undertaking. With newly available hardware, you can now design and install S-band (2.4 GHz) or L-band (1.2 GHz) DVB-S for distribution through the air

to appropriately equipped receivers. Applications would include transmission of virtually any video (+ audio) content over distances of several kilometres (up to 30 km LOS), whether for entertainment or surveillance purposes.



A Dutch firm (Spectra Electronic Development) has created a line of DVB modulators with a range of RF output frequencies; 2.4 and 1.2 GHz are included. The pricing is, affordable if you have a commercial application (actually, compared to true professional gear, the pricing is reasonable; \$Euro 2500) but not likely to attract the average garage-bench experimenter. But it is a start.

This is a 'plug and play' system. One rack mount unit (the modulator/transmitter) can be software adjusted to any (centre) frequency between 2250 and 2500 MHz (1220 and 1600 MHz for L-band) in 1 MHz increments. On the rear deck, there is a power (mains) connection socket, RS 232 for remote control applications, (type N) female RF output, and sockets to connect normal composite video (+ companion audio) or Y/C video. A suitable 2.4 GHz transmission antenna fed either into an external power amplifier or directly to a transmitting antenna completes the installation.

The user selects the symbol rate (between 1.667 and 12.5 Msymbols), FEC (usual 1/2 through 7/8). Optionally, a second programme source can be multiplexed with a second in-rack-unit MPEG-2 encoder.

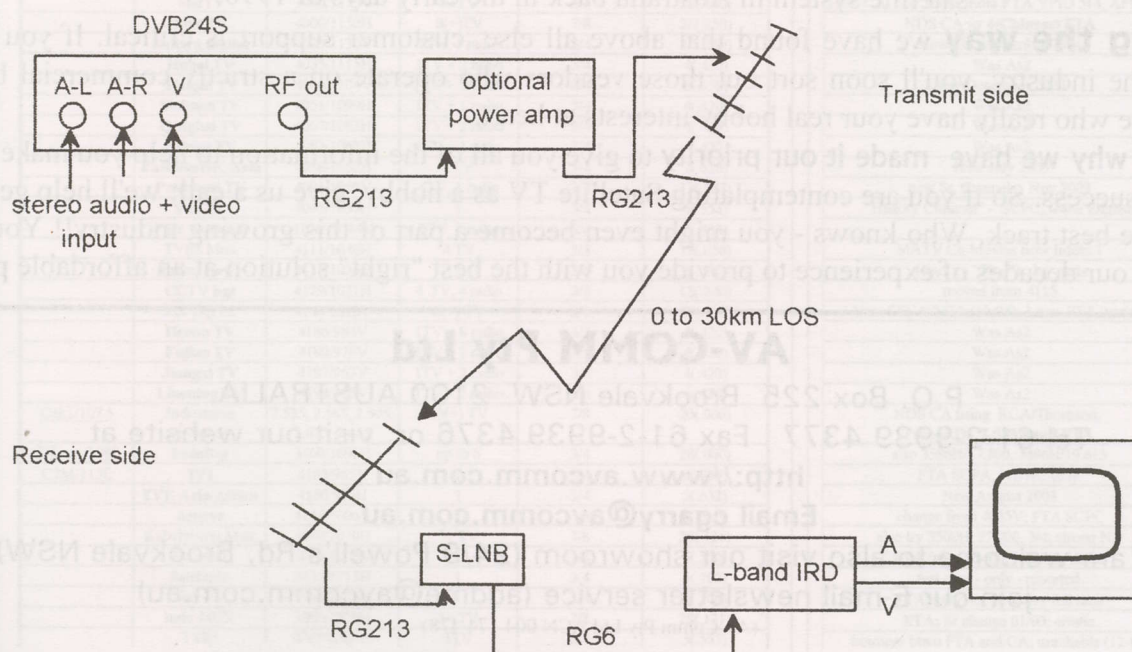
To receive the MPEG2 S-band the receive sites need to be equipped with a S-band down converter. Spectra offers one outdoor model (SPDC2400) (35 dB gain, 0.8 dB noise figure) which converts 2400 MHz to 1400 MHz (L-band) where a stock DVB-S IRD becomes the reception demodulator. In other words - what begins at S-band as MPEG-2 can now be received in MPEG-2 using normal satellite techniques. An alternative S-band LNB is also available through SatFACTS (see p. 28, here). The S-band transmit antenna and S-band receive antennas are available through Merit CCTV

(www.meritcctv.co.nz) - equipped with type N female connectors, which suits a type N male/type N male short jumper cable from antenna to LNB for receive. The downline to the L-band DVB-S IRD is standard RG6.

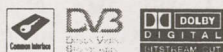
If L-band transmit situations (using Spectra's DVB12S), some minor changes. Obviously the transmit and receive antennas are now designed for the 1.2 GHz range. And as the transmit frequency is within the tuning range of a standard L-band input STB/IRD, no down converter is required (L band out to L band in). However, and this is significant, the S-band downconverter provides two functions that a 1.2 GHz link might miss - badly. First is the low noise figure of the LNB/down converter (anything under 1 dB is a quantum leap in performance over a typically 12-15 dB noise figure L-band IRD). Next is the 35 to 50 dB of signal gain added to the circuit by the LNB. When the L-band IRD's higher noise figure and lack of down converter gain are factored into a 'path' (distance from transmitter to receiver), it comes to more than 40 dB of path loss beyond what would be achieved at 2.4 GHz with the LNB/ down converter in place. So, assuming it is legal to use 1.2 GHz in your area for such a purpose, this would be a bad decision if distances beyond a few kilometres were involved.

How and by whom used?

Spectra seems to be positioned between very expensive professional and very cheap 'amateur' with their product line. Optional versions add equipment for broadcast use - such as portable self powered rugged cases. One semi-commercial installation is underway in New Zealand; we will have a report when it is debugged. In the meantime, try www.spectra-bv.nl/dvb_modulator_sband.html. One word of caution - they are not especially responsive nor forthcoming with requests for additional information.

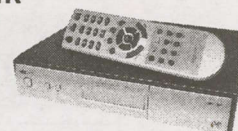


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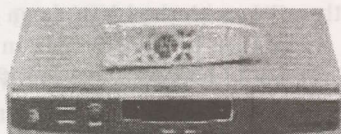


FTA Compact Digital **Terrestrial** Receiver
SD Standard Definition Digital Terrestrial Receiver with
modulator, Wide Hot Key, Teletext & Logical Channel

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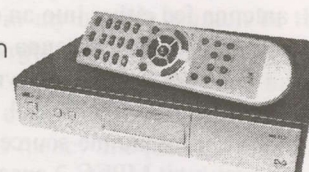
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SatFACTS Pacific/Asian MPEG-2 Digital Watch: 15 OCT, 2005

Bird	Service	RF/IF &Polarity	# Program Channels	FEC	Msym
Them3/78.5	SkyChAust	3695/1455H	up to 3	3/4	5(,000)
	ANT Greece	3672/1478H	1 TV	3/4	13(,333)
	TARBS ME mux	3640/1510H	12TV, 12 radio	2/3	28(,066)
	Ch Nepal	3626/1524V	1	3/4	15(,556)
	Mahar mux	3600/1550H	11TV, 1 rad	3/4	26(,667)
	RR Sat mux	3551/1600H	8TV,10 radio	3/4	13(,333)
InSat 2E/83	TVK Cambodia	3448/1702H	1TV	1/2	6(,312)
	TARBS/Th5	3480/1670H	12 TV+radio	2/3	26(,667)
	Thai Global	3425/1725V	up to 7?	2/3	27(,500)
	ETV mux	4005/1145V	6+ TV	3/4	27(,000)
	Hyd Dig 2E	3910/1240V	1	3/4	5(,000)
	Kairali TV	3699/1451V	1	3/4	3(,184)
NSS6/95E	Indian mux	3643/1507V	3	3/4	19(,531)
	Sky Bangla	3430/1720V	1TV	3/4	6(,000)
	Ant Pac (Greek)	11.104H-Australia	1 TV	3/4	2(,800)
	Guangdong TV	4075/1075H	1TV + radio	3/4	6(,000)
	Euro Bougt	4000/1150H	5TV, 19 radio	3/4	28(,125)
	SatLink	3960/1190H	3TV	3/4	27(,500)
As2/100.5E	Reuters News	3905/1245H	1TV	3/4	4(,000)
	WorldNet	3880/1270H	4+/18radio	1/2	20(,400)
	APTIN Asia	3799/1351H	1	3/4	5(,632)
	Reuters/Sing	3775/1375H	1	3/4	5(,631)
	APTIN Asia#2	3705/1445H	1	5/6	4(,166)
	Macau MUX	4148/1002V	5TV	3/4	11(,850)
As3S/105.5E	Dubai MUX	4020/1430V	4+, radio	3/4	27(,500)
	Fashion TV	3796/1354V	1	3/4	2(,626)
	Trace TV	3792/1358V	1	3/4	2(,400)
	BYU-TV	3767/1383V	1 + 20 audio	1/2	6(,530)
	3-ch miniMUX	3752/1398V	up to 3	3/4	5(,640)
	Saudi TV1	3660/1490V	7+/tests	3/4	27(,500)
As3S/105.5E	CETV digital	3680/1470H	1+ TV	3/4	26(,670)
	Zee bouquet	3700/1450V	10TV	3/4	27(,500)
	Ch News Asia	3706/1444H	1TV (+)	3/4	6(,000)
	Azio TV	3716/1434H	1TV (+)	3/4	7(,000)
	BTW World	3725/1425V	1TV	3/4	4(,450)
	TVB 8	3729/1421H	1TV	3/4	13(,650)
As3S/105.5E	Zee Movies	3732/1418V	3TV	3/4	6(,500)
	TV One	3739/1411V	1TV	3/4	2(,8934)
	SAB TV	3743/2407V	1TV	3/4	3(,300)
	AAJ-TV	3750/1400V	1TV	3/4	2(,820)
	Arirang TV	3755/1395V	1	7/8	4(,418)
	Now TV +	3760/1390H	up to 10TV	7/8	26(,000)
As3S/105.5E	Star TV	3780/1370V	7(+)/TV	3/4	28(,100)
	GXTV	3806/1344V	1TV + 3 radio	3/4	4(,420)
	Shaanxi TV	3813/1337V	1TV + 2 radio	3/4	4(,420)
	Anhui TV	3820/1330V	1TV + 2 radio	3/4	4(,420)
	Jiangsu TV	3827/1330V	1TV + 2 radio	3/4	4(,420)
	HLITV	3834/1316V	1TV	3/4	4(,420)
As3S/105.5E	Star TV	3840/1310H	7(+)/TV	7/8	26(,850)
	Star TV	3860/1290V	5(+)/TV	3/4	27(,500)
	Arabsat MUX	3880/1270H	10+TV, 14Radio	3/4	27(,500)
	Dragon TV	3886/1264V	1 TV	3/4	4(,800)
	Shaanxi TV	3895/1255V	1TV + 6 radio	3/4	6(,813)
	CCTV1	3904/1246V	1TV, 1 radio	7/8	4(,420)
As3S/105.5E	Jilin TV	3914/1236V	1TV + 2 radio	3/4	4(,420)
	Star TV	3920/1230H	4+ TV	7/8	26(,850)
	CNN	3960/1190H	8TV, 1 radio	3/4	27(,500)
	StarTV	3980/1170V	6+TV	3/4	28(,100)
	Star TV	4000/1150H	8(+)/TV	7/8	26(,850)
	Sahara digital	4020/1130V	8TV, 1 radio	3/4	27(,250)
As3S/105.5E	Hubei TV	4035/1115H	1TV + 2 radio	3/4	4(,420)
	Tianjin TV	4046/1104V	1TV + 2 radio	3/4	5(,950)
	Sichuan TV	4051/1099H	1TV + 1 radio	3/4	4(,420)
	Qinghai TV	4067/1083H	1TV + 2 radio	3/4	4(,420)
	Hunan TV	4082/1068H	1TV + 1 radio	3/4	4(,420)
	Fashion/HK-Asia	4088/1062H	1TV	3/4	2(,626)
As3S/105.5E	Pakistani TV	4091/1059V	4TV, 1 radio	3/4	13(,333)
	Sun TV	4095/1055H	1	3/4	5(,554)
	PTV National	4106/1044V	1TV, 1 radio	3/4	3(,333)
	TVB8 Mux	4111/1040H	4 TV	3/4	13(,650)
	Indus News	4115/1035V	1	3/4	3(,331)
	CCTV bqt	4129/1021H	4 TV, 4 radio	3/4	13(,240)
As3S/105.5E	Zee Bqt #2	4140/1010V	8(+)/TV	3/4	27(,500)
	Henan TV	4166/984V	1TV + 8 radio	3/4	4(,420)
	Fujian TV	4180/970V	1TV + 2 radio	3/4	4(,420)
	Jiangxi TV	4187/963V	1TV + 2 radio	3/4	4(,420)
	Liaoning TV	4194/956V	1TV + 2 radio	3/4	4(,420)
	Cak1/107.5	Indovision (S-band)	2,535, 2,565, 2,595, 2,625, 2,655	33(+)/TV	7/8
T Kom/108E	IndoBqt	3460/1690H	up to 6	3/4	28(,000)
	TPI	4185/965V	1	3/4	6(,700)
	TVE Asia-Africa	4160/990H	1	3/4	5(,632)
	Anteve	4144/1006V	1	3/4	6(,510)
	Kabelvision Mux	4080/1070H	7+ TV	7/8	28(,125)
	Indostar	4074/1076V	1	3/4	6(,500)
C2M/113E	Satelindo	3935/1215H	1	3/4	6(,700)
	Bali TV	3926/1224H	1	3/4	4(,208)
	Indo MUX	3880/1270H	3+ TV	7/8	28(,121)
	TVRI	3765/1385H	1TV	3/4	5(,555)

Receivers and Errata

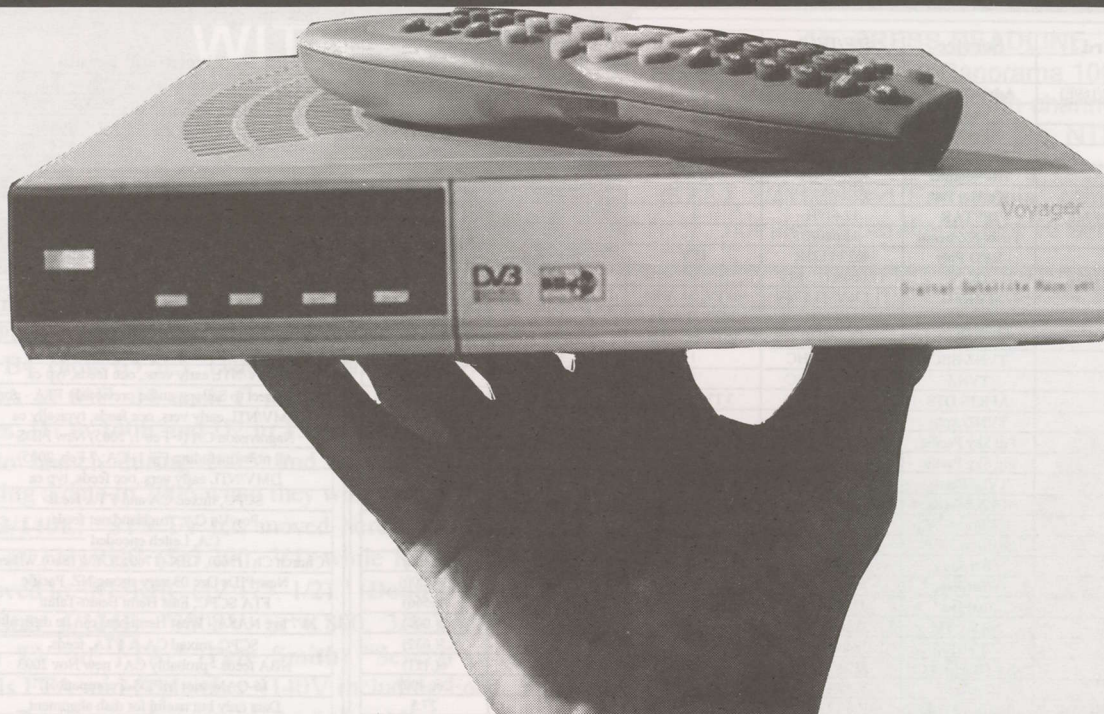
CA (#1, 3); FTA audio #2 (dm)
Late July 04: room for more (FTA)
CA + 23FTA(A1TV, IRB3, Visjon Norge, Pakistan)
New 03/03; FTA
Thai + Indian services; FTA inc. Vibe TV, Sindh TV
3TV, Sradio inc. Hellas TV Greece FTA
FTA
3FTA: TV5, VTV4, ATN Bangla
FTA (reaches SE Australia)
Several ETV now here; wide beam
SCPC, OK E. Aust. wide beam
SCPC, OK E. Aust wide beam
corrections 12/02
New - November 2002
(still) FTA 11-04; was 11.083H
July 04: FTA
FTA TV + radio; moving to 3760H before 31-12
Real Madrid (V769, A770) English FTA
Was 3923H; sometimes FTA
FTA; multiple audio services V2360, A2320
Sometimes FTA; also 3895Vt
FTA & CA
FTA and CA - NASA reports included
5 chs TV, FTA, some tests
FTA ; Dubai Sports Ch some English, soccer-
FTA as of May 1, 2003
new here Dec 2004; Euro-French music videos
Increased coverage; great variety audio chs(03-05)
Sun-TV, Surya TV, KTV (FTA)
FTA MCPC; Yemen, MBC EUROsport tests
replaces analogue same freq: V33, A32
Now SECA 2 CA (10-04)
English + V1160, A1120; 525, 625 versions
Was parallel to 3640Hz analogue (now gone)
Conax CA, all Hindi films
Also reported 3.333, 3/4 October 2005
SAB may no longer here here; moved to NSS-6?
New April 2005; English, urdu
FTA SCPC; New PIDs V3601, A3606 June 2003
CA + FTA; Euro bouquet moving here (late 2005)
NDS CA (Pace DVS211, Zenith)
Guangxi TV; was As2
Was As2
Was As2
Was As2
Was As2; HeiLong
NDS CA (Pace DVS211, Zenith)
NDS CA (Pace DVS211, Zenith)
New April 2004: link to Optus B3 Globecast
Shanghai
Apparently Mongolia
Star Sports Asia (+), FTA NTSC; V514, A670 (10-04)
PowVu CA; new SR Apr 29; CNN radio FTA
NDS CA; Star News India FTA VPID 514, APID 648
NDS CA w/ 4(Chinese) FTA
New Sr September 2004
Was As2
new December 2004
Was As2
Was As2
Was As2
New July 2005
new Sr, channels, Nov 2003
"History Channel" - SCPC, some English
MATV Ch Movies now Irdo 1
Hindi (+ "Plus"); day parts
moved from 4115
Now SECA 2 CA (10-04); 1 occ. FTA (varies)
Was As2
Was As2
Was As2
Was As2
NDS CA using RCA/Thomson,
Pace IRDs; 2.535 has 2 FTA
also 3586H/17.500, 3496H/19.615
FTA SCPC; NT/NC only
New August 2003
change from 4055V, FTA SCPC
also try 3500H, 27.000, 3/4, strong NZ
FTA (new 06-03); V2201, A2202
test card - only - reported
FTA, may not be active full time
FTA; Sr change 01/03; erratic
bounces btwn FTA and CA; unreliable (12-04)

Bird	Service	RF/IF & Polarity	# Program Channels	FEC	Msym
	Brunei/Sing	3733/1417H	1TV	3/4	6(.000)
	SCTV	3726/1424V	1TV	3/4	6(.620)
	RCTI	3473/1677H	2	3/4	8(.000)
As4/122E	CCTV internal	4100/1050V	6	3/4	27(.500)
Jc3/128	Miracle Net	3996/1154V	3 up to 6	5/6	22(.000)
	Asian bqt	3960/1190V	up to 8	7/8	30(.000)
Ap6134E	Multiple	4140/1010V	up to 8	7/8	27(.500)
T18/138	Tests	3460/1690V	8	3/4	30(.000)
	LTV Laos	3804/1346V	1		
Am3/140	STS +	3731/1419R	1	3/4	3(.200)
Jc2A 154	BYU-TV	3915/1245V	1+ 20 languages	3/4	4(.166) (?)
MeasSs2	Astro Mux	11.602H	up to 17TV	3/4	41(.500)
	VTV MUX	11.522V	3 TV	3/4	9(.766)
B3/152	AuroraBiz	12.407V	4 TV, 10 radio	2/3	30(.000)
	UBI/tests	12.425V	up to 13 TV + radio	3/4	22(.500)
	GlobeCast 2	12.525V	13 TV, 8 radio	2/3	30(.000)
	GlobeCast (feeds)	12.550-555V	1TV	3/4 & 2/3	6(.110/670)
	GlobeCast	12.564V/T13	2+ TV	2/3	30(.000)
	UBI/tests	12.613H/T14L	11+TV	3/4	22(.500)
	UBI/tests	12.640H/T14U	11+TV	3/4	22(.500)
	GlobeCast 1	12.658V/T7	14TV, 15 radio	2/3	30(.000)
	UBI/tests	12.674H/T15L	11+TV	3/4	22(.500)
	UBI/tests	12.701H/T15U	11+TV	3/4	22(.500)
	WA ABC	12.702V	1 TV, 1 radio	7/8	14(.288)
	WA SBS	12.720V	4TV, 2 radio	5/6	12(.600)
	WA GWN/WIN	12.738V	2TV	7/8	14(.295)
C1/156E	Optus test bed	12.288V/T1L	no regular TV	1/2	28(.650)
	Aurora	12.324V/T1U	4+ (ABC) TV	1/2	24(.450)
	Pay TV	12.365V/T2	11TV, 2 radio	3/4	27(.800)
	Aurora Home	12.407V/T3	5 TV, 13 radio	2/3	30(.000)
	Pay-TV	12.447V/T4	5TV, 4 data	3/4	27(.800)
	Pay TV (test)	12.487V/T5	3+ TV, data	3/4	27(.800)
	Aurora 2	12.527V/T6	7TV, 20 radio	3/4	30(.000)
	Pay-TV	12.567V/T7	10 TV	3/4	27(.800)
	Pay-TV	12.607V/T8	10 TV	3/4	27(.800)
	Pay-TV	12.647V/T9	10 TV	3/4	27(.800)
	Foxtel tests	12.692V/T10L	ABC TV	1/2	28(.650)
	Aurora MUX	12.728V/T10U	Aurora	1/2	24(.450)
	Austar	12.305H/T11	6TV, 24 data	3/4	30(.000)
	Pay-TV	12.358H/T12	10 TV	3/4	27(.800)
	Pay-TV	12.398H/T13	10 TV	3/4	27(.800)
	Pay-TV	12.438H/T14	6TV, 3 data	3/4	27(.800)
	Pay-TV	12.478H/T15	10 TV	3/4	27(.800)
	Pay-TV	12.518H/T16	10 TV	3/4	27(.800)
	Pay-TV	12.558H/T17	10 TV	3/4	27(.800)
	Pay TV	12.598H/T18	TV	3/4	27(.800)
	Pay-TV	12.638H/T19	10TV, 30 radio	3/4	27(.800)
	Pay TV	12.688H/T20	11TV	3/4	27(.800)
B1/160	7 Central DTV	12.365H	1TV	3/4	5(.100)
	Occ. feeds	12.380H	1 TV - *	3/4	6(.111)
	Occ. feeds	12.384V	1 TV - *	3/4	6(.111)
	Net 7 service	12.397H	1	3/4	7(.200)
	Imparja mx	12.379H	2TV + 8 radio	3/4	5(.424)
	7 digital feeds	12.397H	1TV	3/4	7(.200)
	Feeds to NZ	12.411V	1 TV	3/4	6(.111)
	SBS Mux	12.420H	3+ TV, 2+ radio	5/6	12(.600)
	TVNZ DTH	12.456V	5+TV	3/4	22(.500)
	TVNZ Tests	12.483V	up to 11TV	3/4	22(.500)
	Sky NZ	12.519/546V	7TV/7TV	3/4	22(.500)
	Sky NZ	12.581/608V	6TV/6TV	3/4	22(.500)
	Sky NZ	12.644/671V	9TV	3/4	22(.500)
	ABC HDTV	12.610H	5TV	7/8	14(.3288)
	Sky NZ	12.707/734V	8+TV	3/4	22(.500)
P8/166E	ABS-CBN	12.575H	4+TV, 4+ radio	2/3	13(.845)
	JEDI/TVB	12.686H	11+ TV	3/4	28(.126)
	ABC A-P	4180/970H	2TV, 2 radio	3/4	27(.500)
	Disney Pac	4140/1010H	typ 6 TV	5/6	28(.125)
	Taiwanese MUX	4080/1070H	12+ TV	5/6	30(.000)
	NHK Joho	4060/1090H	7TV, 1 radio	3/4	26(.470)
	FOX Mux	4040/1110V	up to 5TV	7/8	26(.470)
	NET +	4121/1029V	1 TV	3/4	4(.774)
	ESPN USA	4020/1130H	8+TV, data	3/4	26(.470)
	Discovery	3980/1170H	8 typ.	3/4	27(.690)
	CalBgt/Pas8	3940/1210H	up to 3+ FTA	7/8	27(.690)
	CNBC HK	3900/1250H	up to 7TV	3/4	27(.500)
	FilipinoMUX	3880/1270V	up to 8TV+radio	5/6	28(.694)
	TaiwanBgt	3860/1290H	12TV + 30 r	5/6	28(.000)
	CCTV Mux	3829/1321H	up to 4+ 1 radio	3/4	13(.240)
	TVBS-N	3836/1314V	1FTA, 4+ CA	3/4	22(.000)
	EMTV PNG	3808/1342V	1 + 2 radio	3/4	5(.632)
	CNNI	3780/1370H	3, up to 5 TV	3/4	25(.000)
	Discovery Asia	3764/1386V	Up to 6 TV	3/4	19(.850)
	MTV	3740/1410H	8	2/3	27(.500)
P2/169E	WA Mux Pv	12.281V	3+ TV, radio	2/3	27(.500)
	Arlang TV	12.401V	1TV	3/4	4(.400)
	ABS-CBN	12.575H	4TV, 2 radio		13(.845)
	Test mux	12.715H	6+ TV	2/3	30(.000)
	TARBS feeds	4090V/1060V	9TV + radio	3/4	21(.000)
	BBC SCPC	3986/1164H	1TV	1/2	5(.700)

Receivers and Errata

FTA ; Singapore 23hrs, Brunei 1 hr, Brunei V1200 was on 4048V; New Caledonia, parts of Australia FTA SCPC; Australia, New Caledonia, some Eng. Irdeto 2; 4060V HDTV CA; also try 4020V PowerVu; some FTA (Ch. 1 & 3) CA & FTA NTSC: Japan, Taiwan (ApStar 6: also 4180V same #s; analogue also) also try 3660/3540VVt, Sr 30,000, 3/4; some FTA VPID 512, APID 4112 North beam; also try 3875R, 12.475, 1/2 Strong NZ & Australia; may now be 1/2, 6.525 Aust East beam - **3 FTA + 14 CA** WA only? Skew path, intended Asia differs from 12.407 C1; **tune ch FTA; NZ+Au** T11/lower testing late May 2005 NZ + Au, FTA Mcript CA occ feeds, NZ + Au; recently 12.553V AMTV, Healing only FTA svcs now here High performance beam, not NZ High performance beam; not NZ NZ + Au (Mcript, PowVu capable) High performance beam; not NZ High performance beam; not NZ ABC WA tests, FTA SBS, radio tests WA FTA Irdeto V2 CA, tests (GWN, WIN) Now on Australia + NZ beam; SCPC CA, replaced Aurora T10 1 February 2005; 19 radio Tests; SBS-NDS CA, others FTA when here NZ (90cm) + Australia (**Only C1 svc left on NZ**) Australia NA only (leakage to Norfolk, New Cal) Australia NA only (leakage); 9-Net x 3 widescreen Arrow radio (still here), tone FTA Pay-per-view movies; CA Pay-per-view movies; CA Pay-per-view movies; CA ABC for Foxtel previously 12.288V changes September 2005 Austar inter, **Expo FTA** NDS CA + Mcript, CA CA, subscriptions available Australia, Norfolk Sky News active; 'Help x 2' **FTA** CA, subscriptions avail Au, Nrlrk, **TVSN FTA** CA, subscriptions available Australia, Norfolk "Home"CA, subscription available Australia, Nrlrk CA, subscriptions available Australia, Norfolk CA, subscription available Australia, Norfolk CA, subscription available Australia, Norfolk Central beam; Freq change 08-05 * - plus 12.451H, 12.460H * - plus 12.293V, 12.402V, 12.411V Full schedule less commercials - links; may be CA PIDs vary; also try 12.360, 12.370 occ. digital feeds; typ fta Often NTSC; USA-Australia-NZ **Also 12.437H, 12.456H** same params; HDTV+WS FTA 7 channels (TVNZ x 4), +Maori, DW, CCTV9 Testing late June; 16:9 added late July NDS CA, subscription available NZ NDS CA, subscription available NZ NDS CA, subscription available NZ also see 12.626, 643, 670, 688, & 706H NDS CA, subscriptions available NZ June 2002-Irdeto-2 CA Dateline west; also east PAS2, 3901V PowVu CA Tests - CA service announced PowVu CA & FTA; subscription available was PAS-2, previously 3992Vt; **feeds FTA** NET25 + FTA; new PIDS April '03; reload PowVu CA; ch 11 DCP-CCP bootload; audio **FTA** PowVu/CA (some audio **FTA**) PowVu CA & FTA (**EWTV + CBS + TBN +**) NDS CA (6 channels); one test card occ FTA **Myx FTA** V1960, A1920 + radio FTA Mixed **FTA & CA**; STC gone (CA) PowVu FTA, replaces PAS-2 svc Difficult because of CCTV cross pole PowVu CA PowerVu; some audio **FTA** PowerVu; Asian MUX; new parameters Nov '03 # 8 **MTV China FTA V289, A290**; rest CA PowVu CA, WIN, ABC NT, SBS; status unknown Test - may not stay permanently Temp **FTA**; subs Aust 011-800-2270-0722 initially with 6 NTSC colour bars Occ **FTA** (Chile +); BIG power reduction Nov 03 BBC World moved here January 2005

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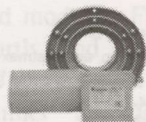
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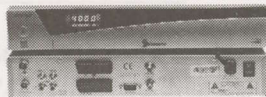
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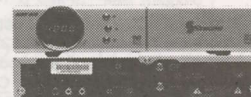


FTA RECEIVER



2 X CI CAM RECEIVER

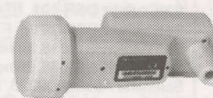
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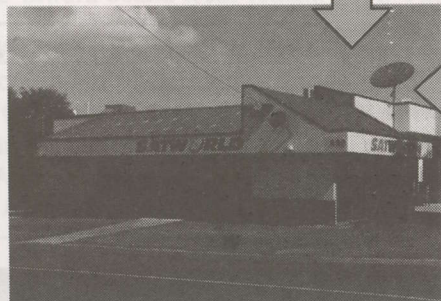


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Bird	Service	RF/IF & Polarity	# Program Channels	FEC	Msym
(PAS2/169E)	Adventists.tv	4040/1010H	1	2/3	5(,900)
	Feeds	3868/1182H	1	2/3	6(,620)
	Feeds	3939/1211H	2 (typ NTSC)	2/3	6(,620)/7(,498)
	Cal PowVu	3901/1249H	up to 8	3/4	30(,800)
	HK bouquet	3850/1300H	up to 8	2/3	24(,900)
	Korean Bqt	3771/1379H	1	3/4	6(,510)
1804/174E	IPSTAR	12.619H	1	2/3	25(,220)
	Tests-NZ beam	12.646H	1	3/4	22(,418)
	RFO Poly	4027/1123R	1TV	3/4	4(,566)
1701/180E	TNTV	11.060&11.514V	9	3/4	30(,000)
	TVRFO	11.136V, 11.174V	6+TV, 3+ radio	3/4	23(,149)
	Canal+Sat	11.610H	16TV, 1 radio	3/4	30(,000)
	PBS	12.648HH	16TV possible	3/4	28(,066)
	TVNZ/BBC	4186/964RHC	1	3/4	5(,632)
	TVNZ	4178/972RHC	1	3/4	5(,632)
	AFRTS DTS	4175/975L	3 TV, 3 radio	2/3	3(,680)
	TVNZ/Aptn	4170/980RHC	1	3/4	5(,632)
	Fiji Sky Pacific	4095/1055LHC	6TV + future radio	3/4	16(,505)
	Fiji Sky Pacific	4055/1095LHC	6TV + future radio	3/4	16(,505)
	TVNZ/feeds	4052/1098RHC	1	3/4	5(,632)
	TVNZ feeds	4044/1106R	1	3/4	5(,632)
	NZ Prime TV	4024/1126L	1	2/3	6(,876)
	NBC to 7 Oz	3960/1190R	1	7/8	6(,447)
	TBN Mux	3927/1223R	3TV	2/3	9(,100)
	WorldNet	3886/1264R	1TV, 37 radio	3/4	25(,000)
	Ioarana	3772/1378L	1	3/4	4(,566)
	NASA TV	3854/1296R	1 TV	3/4	2(,000)
	TVNZ	3846/1304R	1	3/4	5(,632)
	NBA (Barker) Ch	3803/1347R	1	3/4	6(,111)
	USA feeds	3749/1401R	4?	?	26(,400)
NSS-5/177W	Pacific IP Data	3763/1387R	none-data	3/4	27.5
	BYU-TV	4185/965R	1TV, 20+ audio	1/2	6(,525)
	IPSTAR Tests	12.691V	8 TV	5/6	17(,600)
	Russian TV tests	12.744V	2 TV	3/4	3(,977)

Receivers and Errata

New December 2003; 24/7 "Hope Chs."
FTA (occ sport); also try 3863, Sr6.100
FTA-type NTSC-occ sport, live Shuttle
PowVu CA + FTA (includes BBC-W 05-05)
was 4148Vt; some FTA
Korean MUX, reload 12-04; new Sr
Tests, late May start; also 12.646H
Testing possible data links; June 2003
SE spot beam; was 4027LHC
east spot; 10TV + r each, vertical pol.
FTA 11.136 Tahitian beam, 11.174 west beam; 12/04
1+ FTA, MediaGd "2"; + 10.975 weaker
Testing Fiji region pay-TV (MDS) package (Oct '04)
DMV/NTL early vers., occ feeds, typ ca
DMV/NTL early vers., occ feeds, typ ca
'DTS Direct to Sailors; audio previously FTA - gone
DMV/NTL early vers., occ feeds, typically ca
Nagravision CA (> Feb 1, 2005) New PIDS
All now (including Fiji 1) CA; 7 Feb, 2005)
DMV/NTL early vers., occ feeds, typ ca
SCPC, mixed CA and FTA feeds
PowVu CA; Auckland net feeds
CA, Leitch encoded
Church Ch (1560), TBN (1760), JCTV (1860) W hemi
New PIDS Dec 03 very strong NZ, Pacific
FTA SCPC; East Hemi Beam-Tahiti
24/7 live NASA - West Hemi bm (can be difficult!)
SCPC, mixed CA & FTA, feeds
NBA feeds - probably CA - new Nov 2003
16-QAM (not MPEG-2 compatible)
Data only but useful for dish alignment
Global beam - requires sizeable dish
CA Tests - Taiwan TV; data coming?? (NZ beam)
Tests - may not last (May 2005); NZ bm; PKVS, REN

MPEG-2 DVB Receivers: (Data here believed accurate; we assume no responsibility for correctness!)

AV-COMM R3100. FTA, excellent sensitivity (review SF May 1998); new version Sept '99. AV-COMM P/L, 61-2-9939-4377.
AV-COMM Tiny Tot. FTA, 12Vdc operated, palm sized, low power consumption; review SF#120. Contact # above.
Coship 3188C. Review SF#107. Blind search FTA rcvr; works well. Phoenix Technology Group (www.phoenixsatellite.com.au) (Irdeto 2 as well as FTA versions)
Divitone: "Left-handed" review SF#115; does "code key" entry. Available <http://www.satmax.ws>
eMTECH eM-100B (FTA), eM-200B (FTA + Ctx2), eM210B (FTA + 2xCI + positioner); KanSat 61-7-5484 6246 (review SF#89)
Fortec Star Lifetime. Two versions, both blind search, code-key programmable, one X 2 CI. Review SF#119. www.aDigitalLife.com
Humax ICR1 5400 (Z). Embedded Irdeto + 2 CAM slots; initial units had NTSC glitch, now fixed. Widely available; new software avail 04-04, SF#76
Humax IRC1 5410 (Z). Adaptable version capable of holding multi-CA systems (SF#98, 99). Widely available; original importer Sciteq (www.sciteq.com.au).
Hyundai-TV/COM. HSS100B/G (Pacific), HSS-100C (China) FTA. Different software versions; 2.26/2.27 good performers, 3.11 and those with Nokia tuners also good; later 5.0 not good.
Hyundai HSS700. FTA, PowerVu, SCPC/MCPC. Review SF March 1999. Kristal Electronics, 61-7-4788-8902.
Hyundai HSS800CI. FTA, Irdeto (with CAM) + other CA systems, PowerVu, NTSC. Kristal Electronics, above; review SF#63.
INNOCIA IDS3088. Review SF#111. Blind search FTA receiver. High quality IRD; available Phoenix Technology Group, and Satmax (<http://www.satmax.ws>).
ID Digital CI-24 Sensor. New August 2003; new lower noise tuner, extra sensitivity, CI Interface slot Irdeto 1 & 2; review SF#109. Sciteq 61-8-9409-6677.
KSF-570 FTA digital receiver, import; KSC-570 adds CI x 2 (no test or user results available). Asoft Limited, 64-4-234-1096
KSC-N550H2 'Premium Dual DVR' digital receiver (no test or user results available). Asoft Limited, 64-4-234-1096
MediaStar DT.5. New (May 00) single chip FTA; review June 00 SF. MediaStar Comm. Int. 61-2-9618-5777
MediaStar D10. FTA and Irdeto embedded CA. VG receiver; see review SF#96, August 2002. Contacts immediately above.
MultiChoice (UEC) 660. Essentially same as Australian 660, not grey market contrary to reports. Sciteq tel 61-8-9306-3738
Nokia "d-box" (V1.7X). European, FTA, may only be German language, capable of Dr. Overflow software. SF#95, p. 14.
Nokia 9200/9500. When equipped with proper software, does Aurora, originally did pay-TV services provided software has been "patched" with "Sandra" or similar program. See SF#95, p. 14, SF#96 p. 15. SatWorld 61-3-9773-9270 (www.satworld.com.au)
Pace DGT400/DVR500. Originally Galaxy (Now Foxtel+Austar). Irdeto, some FTA with difficulty (Foxtel Australia 1300-360818). UECs replaced.
Pace "Worldbox" (DSR-620 in NZ). Non-DVB compliant NDS CA including Sky NZ, no FTA; similar "Zenith" version (see SF#115, p. 15).
Phoenix 111, 222, 333 models (no longer produced): Service, backup - Phoenix Technology Group 61-3-9553-3399; www.phoenixsatellite.com.au
Pioneer TS4. Mediaguard CA (no FTA), embedded Msym, FEC, only for Canal+Satellite (AntenneCal ++687-43.81.56)
PowerVu (D9223, 9225, 9234). Non-DVB compliant MPEG-2 unless loaded with software through ESPN Boot Loader (see below). Primarily sold for proprietary CA (NHK, CMT etc). For service only - call Scientific Atlanta 61-2-9452-3388. For revision model D9850, see Scientific Atlanta (below).
PowTek. Blind Search Chinese sourced, field tests rate it highly. Source jason@aDigitalLife.com
Prosat 2102S. FTA SCPC/MCPC, NTSC/PAL, SCART + RCA. Sciteq 61-8-9306-3738.
SatCruiser DSR-101. FTA SCPC/MCPC, PowVu, NTSC/PAL. (Skyvision Australia 61-3-9888-7491, Telsat 64-6-356-2749); no longer available.)
SatCruiser DSR-201P. FTA SCPC/MCPC, PowVu, NTSC/PAL, analogue, positioner - (Skyvision - see above); no longer available.
SATWORK ST3618. Blind search FTA receiver. Fast search, problems, especially in "memory-filing" system; review SF#111. Available DMSi at tim@dmsiusa.com.
SATWORK ST3688. Blind search, 3000+ ch memory, multi-format RF modulator; improved version 3618. Review SF#113; available DMSi (above).
Scientific Atlanta D9223, D9234, D9225; Orig. PowerVu, superseded Dec 2003 by D9850. Commercial receiver, available TVO 61-2-9281-4481, John Martin
Strong Technologies SRT2620. SCPC, MCPC FTA, exc sensitivity, ease use, programming. Review SF#91 (ph. below).
Strong SRT 4600. SCPC, MCPC, PowerVu; exc graphics, ease of use, review SF#64. Strong Technologies 61-3-8795-7990.
Strong 4800. SCPC, MCPC, embedded Irdeto+ CAM slots, does code-key with additional software, Aurora. Strong Technologies 61-3-8795-7990.
Strong 4800 II. SCPC, MCPC CAM slots x 2 for Aurora +, Zee, Canal +, code key with additional software. Strong Technologies (above); review SF#103.
Strong 4890. SCPC, MCPC, 30Gb PVR, 2 CAM slots, DiSEqC 1.0, 1.2 (review SF#84), does code key with additional software; Strong Technologies, # above.
UEC Atlas/Titan (1000). New July 2003, replacing DGT400 for Austar. No SCART, L-band loop; also available Rural Electronics 61-2-6361 3636.
UEC642. Designed for Aurora (Irdeto), approved by Optus; w/new software, C-band FTA; faulty P/S. Norsat 61-8-9451-8300.
UEC660. Upgraded UEC642, used by Sky Racing Aust., Foxtel, limited FTA. (Nationwide - 61-7-3252-2947); P/S problems.
UEC700/720. Single chip Irdeto built-in design for Foxtel; unfriendly for FTA. Power supply problems, seldom sold to consumers; propensity to fall off back of trucks.
Voyager. Two models (08-05); one FTA auto scan, 6000 ch memory; one multi-CA format CAM. Satlinknz.co.nz
Winersat DigiBox 200. C + Ku basic receiver but includes Teletext for NZ TVOne, 2 VBI. Satlinknz.co.nz, fax 64-9-814-9447; long term teletext problems (loses TT).
"X" Digital. When modified with "aftermarket" Internet software, does Aurora and other V-1 CA without card; review SF#119. Strong Technologies (61-3-8795-7990).

Accessories:
Aurora smart cards. MCRYPT (Irdeto V2) cards now available (Jan 2005), Sciteq 61-8-9409-6677.
PowerVu Software Upgrade: PAS-8, 4020/1130Hz, Sr 26.470, 3/4; pgm ch 11 and follow instructions (do not leave early!)
PowerVu (Pacific) repair service: Cable & Sat Svcs, Darius West, 61-2-9792-1421 (Email darius@cases.net.au)

WITH THE OBSERVERS

AT PRESS DEADLINE

Net 10's coverage of Mt Panorama 1000 feed B3, 12.443H, Sr 6.669, 3/4 with channel label 'Tandberg Services', FTA on 9th, NTL on 10th, possibly as feed for webcasting. Also, 12.451H (6.669, 3/4) labelled 'Euromedia', remained FTA not always parallel to Net 10 service.

Launches: October 27 (subject to further delay), Telekom 2, to 118E with 24 C-band transponders replacing aged Palapa B4 (now 65.5E). Date uncertain, possibly Dec 05, InSat 4A to 83E; 12 each C and Ku. Australia's two new satellites, D1 to 160E and D2 to 156E, are now officially 'not going to launch during 2005' and launcher Ariane is not suggesting a date in 2006 when they will be.

AM3/140E: "STS TV has moved here from Gorizont 33 (145E) at 3731RHC (Sr3.200, 3/4) while KT and NTV has also moved to 3875RHC (12.475, 1/2)." (Donny, Taiwan)

ApStar 6/134E: "3808V, Sr 8.800, 3/4 Toon TV and Dragon TV are FTA." (Pete Smith) "Several programme channels FTA mid-September 4140V including Food, Travel, Fishing, Pet, Exam, Auto and Baby." (Freddie)

AsiaSat 2/100.5E: "Found grand opening for Disneyland Hong Kong on 3697V, Sr 20.615, 3/4 with four programming channels apparently being fed back to USA." (Bill Richards, SA)

AsiaSat 3S/105E: "ABC Australia-Pacific began testing 3700V and then reverted to CA format; alleged purpose of new service is to feed into Iraq and Afghanistan where Australia has troops and support personnel stationed; V2001, A2002." (CG, Sydney) "At least some of the European bouquet has moved from As2 4000H to this satellite at 3760H, using Sr 26.000 and modified FEC of 7/8. German services will move here shortly, and after 1 January As2 is scheduled to shut down. TV5 Asie is already on As3S." (Charles) "New Urdu channel 'TV One' is available on 3739V, Sr 2.894, 3/4." (Carrie) (Editor's note: Also reported with Sr 3.333, 3/4 and TV One Pakistan, which may be the same service, also reported here at Sr 2.893)

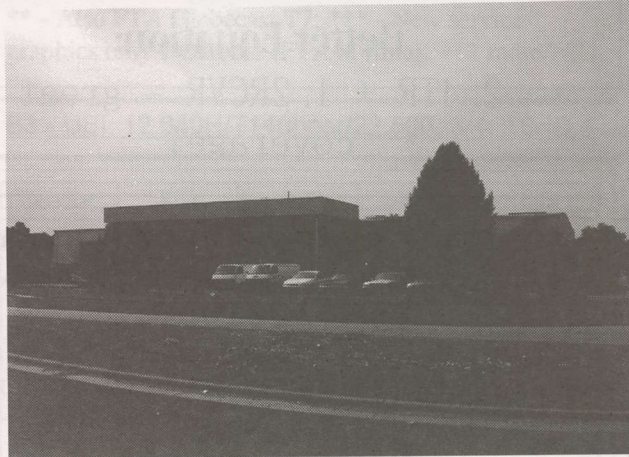
Intelsat 701/180E: "Alhurra Iraq is new on 3886RHC, FTA, V2560, A2520." (Ja)

IpStar / 118E: Tests at 100E, 118E shortly.

PAS-2/ 169E: "Moto GP Sepang FTA feeds 4058H, Sr 13.500, 3/4 V308, A256." (Bill Richards, SA)

Optus B1/160E: "TVN horse racing SCPC feeds on 12.368V, Sr 6.670, 3/4 V308, A256 and SID 1." (Bill Richards, SA)

Optus B3/152E: "T13/12.563H, 30.000, 2/3 Globecast has had a gradual erosion of FTA to CA; on October 1, 'Telepace' (Italian Roman Catholic channel) joined the CA group. Others going CA include horse racing's TVN although TVN's SCPC inward bound feeds remain FTA. The only remaining



New digs. Lacey's.tv has moved into new, larger quarters from their former Frankston (Victoria) location; now at 42 Brunel Road, Seaford (Victoria).

The firm is increasing its inventory of satellite TV parts including their new line of 'Healing' receivers.

FTA's on this transponder are 'AMTV' (which promotes itself as FTA) and the 'Healing Channel'. T7/12.657V, 30.000, 2/3 Globecast relabelled Russian channel NTV (V1760, A1720) as 'ORT12' and then late in September returned to the 'NTV' label." (IF, Qld)

Optus C1/156E: "T1/12.305V centre freq; as of late in August this changed to NANZ beam, lower half of 72 MHz bandwidth filled with narrowband SCPCs. Believe they are individual feeds 'into' Bordernet IDSP (SF#133, p. 30). T10/12.709V, also 72 MHz wide. Two MCPCs previously on T1, have moved here. The Aurora MUX moved from 12.324V (T1) to 12.728V, 24.450, 1/2 (see SF#133, p. 29). The Foxtel ABCs MCPC moved from 12.288V (T1L) to 12.692V, 28.650, 1/2 (T10 lower). T3/12.407V, 30.000, 2/3 Aurora (Australia + NZ footprint) - radio channel here labelled 'VCB' at APID 69 has switched to FTA (previously available with an authorised card or grey market software); called 'Vision FM', an Australian Christian station. FTA 'EXPO' continues to run on T11/12.305H, 30.000, 3/4 but the CA version 'EXPO' has moved to 12.438H, 27.88, 3/4 at V1061, A1062 (channel has been relabelled 'SPARE' but is still carrying data streams of video and audio. On T18, 12.598H, 27.800, 3/4 at V1031, A1032 - channel previously labelled 'ch2' with Foxtel

WITH THE OBSERVERS: Reports of new programmers, changes in established programming sources are encouraged from readers throughout the Pacific and Asian regions. Information shared here is an important tool in our ever expanding satellite TV universe. **Photos of yourself, your equipment** or off-air photos taken from your TV screen are welcomed. TV screen photos: If PAL or SECAM, set camera to f3.5-f5 at 1/15th second with ASA 100 film; for NTSC, change shutter speed to 1/30th. Use no flash, set camera on tripod or hold steady. Alternately submit any VHS speed, format reception directly to SatFACTS and we will photograph for you. Deadline for November 15th issue: November 4th by mail or 5PM NZST November 5th if by fax to 64-9-406-1083 or Email skyking@clear.net.nz.

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promo CA has been relabelled 'EXPO' but remains CA." (IF, Qld)

Soapbox: "Is it possible a normal computer monitor can be connected to the VGA socket in the receiver Phoenix advertises in SF#133 (page 6)? Realise that VGA is only referring to the type of connector (ie 15 pin high density D type) and not (necessarily) VGA resolution. But as some HDTV sets also have VGA connectors, and are capable of being used as (progressive scan) computer displays, why not the semi-reverse? Is it possible the VGA connector on Phoenix's ('Terrestrial H.D.T.V. High Definition Receiver') might carry signals of a standard computer resolution (eg XGA)? So it might be possible to watch high definition by simply plugging a computer monitor into the Phoenix receiver." (AI, NSW) (Editor's question: Have you tried this, James?) "Reference the Optus C1 horizontal puddle that seems to be supplying some of the Australian beam Foxtel/Austar transponders into segments of New Zealand - I have seen on a ten foot dish in middle NSW spectrum analyser displays of some of Sky NZ's vertical B1 transponders. Not enough for lock of course but the location 100km west of Sydney may not be in the focus area of this particular 'puddle'." (NS, NSW) (Editor's question: There are not many Ku-quality ten foot dishes out there, but perhaps others in Australia have had this level or better 'results' with B1's Sky NZ service? Certainly on Norfolk Island Sky does very well with 2m and smaller solid dishes - the only area we know of which has moderate size dish reception from both Australia and New Zealand pay-satellite services.) "I really enjoyed reading the abbreviated history of C-band TVRO (SF#133) and look forward to the full release of 'VIDEO PIRATES'. After reading the trials and tribulations of the early receiver creator, Steve Richey, I believe he may have left the electronics industry at about the right time. The use of microprocessors, software designs and CAD (computer aided design) approached, has made it all but impossible for young electronic inventors to make meaningful contributions to the development of any facet of electronics." (ER, NSW) "We have finally made the decision to cease commercial operations at the end of this year. Everything we have in stock, collected over decades by our predecessor Bryon Evans and ourselves, must be sold or disposed of by that time." (Brian Dillon, Managing Director, Pacific Antennas (2000) Ltd; 0274 789 160). (Editor's note: What that leaves as a commercial satellite hardware installer and stockist is zero - nobody at all - in New Zealand!) "We are subscribers to SatFACTS and distribute the 'Kaon' brand satellite receivers in NZ. We have three models: KSF-570, a FTA digital receiver, KSC-570, a combo FTA and CI slot x 2, and, KSC-N550H2 a premium dual PVR satellite receiver. Anil Hari, MD, ASoft Limited, <http://www.asoft.co.nz>." (Anil Hari) "China's on again and off again policy relating to ownership of a private or non government approved C-band dish is 'off' again. Latest advisories suggest anyone caught with a non-authorised dish will face legal sanctions, financial fines, possible jail time." (Hillary) "I believe that major cities other than Sydney are in for a rude shock sometime quite soon. UNwired, which SatFACTS covered extensively just a year ago, because of the C-band reception interference created in and around Sydney, apparently has not been actually activated other than on a modest test basis beyond Sydney. The firm's CEO David Spence has recently been quoted in

B3 - UBI: 12.674H/T15lower/22.500, 3/4; TS ID 1

Service	SID	VPID	APID	Info
1/Heya	1	608	800	Arabic/CA
2/Infy	2	609	801	Arabic/CA
3/NEWT	3	610	802	Arabic/CA
4/MWER	4	611	803	Arabic/CA
5/ALYM	5	612	804	Arabic/CA
6/MSLT	6	613	805	Arabic/CA
7/NDM	7	614	806	Arabic/CA
8/NVAR	8	615	807	Arabic/CA
9/ALSH	9	616	808	Arabic/CA
10/CIN1	10	617	809	Arabic/CA
11/ROTC	11	618	810	Arabic/CA
12/CH64	12	619	811	Arabic/CA

+12 radio services; 3 in use.

B3 - UBI: 12.701H/T15upper/22.500, 3/4; TS ID 2

Service	SID	VPID	APID	Info
1/ROTZ	12	608	800	Arabic/CA
2/ESC1	13	609	801	Arabic/CA
3/TVS	14	610	802	Arabic/CA
4/JSC	15	611	803	Arabic/CA
5/PANO	16 (*)	612	804	Arabic/CA
6/ROTT	17	613	805	Arabic/CA
7/ROTM	18	614	806	Arabic/CA
8/SAT7	19	615	807	Arabic/CA
9/ALMJ	20	616	808	Arabic/CA
10/NNEW	21	617	809	Arabic/CA
11/SHRQ	22	618	810	Arabic/CA
12/CH65	65	619	811	**

* - Australian Arabic community channel; ** - New service with only graphics 1 October (FTA at time).
+12 radio, none in use.

B3 - UBI: 12.613H/T14lower/22.500, 3/4; TS ID 3

Note: Signal on this MCPC has been 'inverted' since 1 September.

Service	SID	VPID	APID	Info
1/IRQY	23	608	800	Arabic/CA
2/ATV	24	609	801	Turk/CA
3/VZYN	25 (*)	610	802	Turk/CA
4/SHOW	26	611	803	Turk/CA
5/NTV	27	612	804	Turk/CA
6/LIG	28	613	805	Turk/CA
7/PTRK	29	614	806	Turk/CA

* - Australian Turkish community channel

8/STV	30	615	807	Turk/CA
9/TRTI	31 (**)	616	808	Turk/CA
10/KDTV	32	617	809	Turk/CA
11/SINT	33	618	810	Turk/Fta
12/CH66	66	619	811	***

** - Also FTA Globecast T7; *** - New service graphics only 1 October (FTA at time); +12 radio/NIU

B3 - UBI: 12.640H/T14upper/22.500, 3/4; TS ID 4

Service	SID	VPID	APID	Info
1/TNOV	34	512	640	Latino/CA
2/RITL	35	513	641	Latino/CA
3/COLM	36	514	642	Latino/CA
4/PELI	37	515	643	Latino/CA
5/TVE	38	516	644	Span/CA
6/CINL	39	517	645	Latino/CA
7/TEFE	40	518	646	Latino/CA
8/CEST	41	519	647	Latino/CA
9/PLST	42	520	648	Polish/Fta
10/KTV	43	521	649	Kurd/Fta
11/SCTV	44(*)	522	650	/FTA
12/CH67	67	523	651	**

* - 'Satellite Community TV',
www.communitytv.com.au; ** - New service graphics only 1 October; +13 radio/none in use.

B3 - UBI: 12.425H/T11lower/22.500, 3/4; TS ID 5

Service	SID	VPID	APID	Info
1/RTPi	45	512	640	Portg/CA
2/SIC	46	513	641	Portg/CA
3/TVGL	47	514	642	Portg/CA
4/AFN	55 (*)	515	643	Arabic/CA
5/TASH	56 (*)	516	644	Arabic/CA
6/JAMJ	57(**)	517	645	Arabic/CA
7/MAD	58	518	646	Greek/Fta
8/ALPH	59	519	647	Greek/Fta
9/CYPS	60	520	648	Cyprus/Fta
10/PLAN	61	521	649	Bulgar/CA
11/MKTV	62	522	650	Maced/CA
12/HYAT	63	523	651	Balkan/CA

* - USA Arabic for Iranians (CA scheduled Oct 7);
** - Arabic Iran; CA October 7; +12 radio/NIU.

October 01 (2005) analysis of UBI channels available (CA and FTA) courtesy of IF, Queensland. Individual services come and go with little announcement or warning; be advised.

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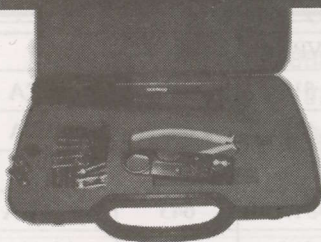
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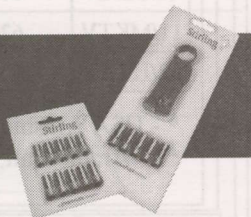


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Sydney newspapers announcing. 'Our plans to expand into other capital cities are now mature after attracting 25,000 subscribers through the end of May'. Why they quote 'end of May' numbers is a puzzle, however given it is now 120 days after that point." (AI, NSW) (Editor's note: That would explain why folks in Melbourne and other cap-cities have been baffled how Sydney could be hit so hard and they have had no problems. Hang on - they are coming. As the following notes.) "Fiji TV's C-band reception from I701 in and about the capital city of Suva is being torn asunder by interference from the newly launched UNwired service there. The problem appears to be a carbon-copy of what Sydney has already experienced; LNBF overload which is made worse than Australia because the high look angle of I701 (near 70 degrees) on an essentially 'flat' surface dish with a f/D to 0.4 or more leaves the feed plus LNB 'sticking up in the air' with nothing to shield it. There are some options here - because the I701 downlink is in and about the 4.1 GHz region, LNBFs could be factory custom tuned to favour the top frequency end of the band and significantly reduce their gain and response to signals in the much lower 3.4 - 3.5 GHz region." (Anonymous, consultant to Fiji TV, Canada) "Should you question whether there are business opportunities for average folks to make successful, consider ManiaTV.com, a Colorado based firm that has attracted a huge online web audience (1.6 million 'hits' during July) and now has major sponsorship from firms such as Coca-Cola. Or try 'The Basement', an Australian based site of similar growth and aspirations. These independent folks are creating the electronic equivalent of the 19th and 20th century 'town square forums' where anyone with something to say could climb on a rock or box and spout off. Within reason, commercial firms will back such ventures provided they create 'the numbers' - lots of eyeballs watching. The medium - internet - is totally unimportant as long as the creators deliver live human beings staring at a screen. Any screen, anywhere. And what makes it different than everything that has come before is 'interactivity' - the ability of users/viewers to directly interact with the subject on the screen. One year ago I thought this entire internet web thingy was destined to an early demise. Egg on my face - this will replace everything else in a decade - sadly, I was born twenty years too soon to witness this one's maturity. Now, what will replace 'the web' in another twenty years?" (Edmund)

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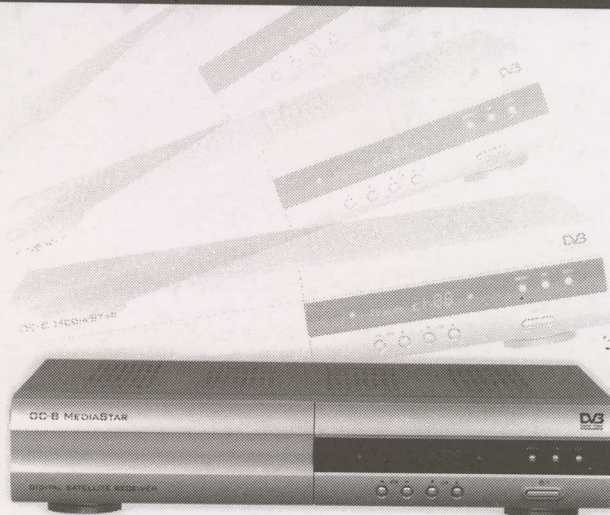
Early reader reactions to **"VIDEO PIRATES"**:

"I had no idea that encryption developers such as M/A Com-GI, actually conspired to release piracy breach of their own systems as a marketing tool to increase sales of their decoders. Now, for the first time, it all makes perfect sense. The REAL pirates are, always have been, the firms creating the encryption systems. The consumers, installers and competitive equipment makers never had a chance!" (EH, former C-band dealer, USA)

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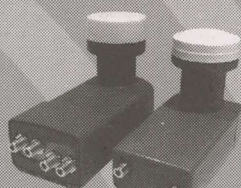


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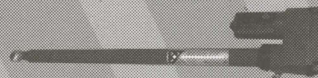


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